

Supplemental Material

A Toxicogenomic Comparison of Primary and Photochemically Altered Air Pollutant Mixtures

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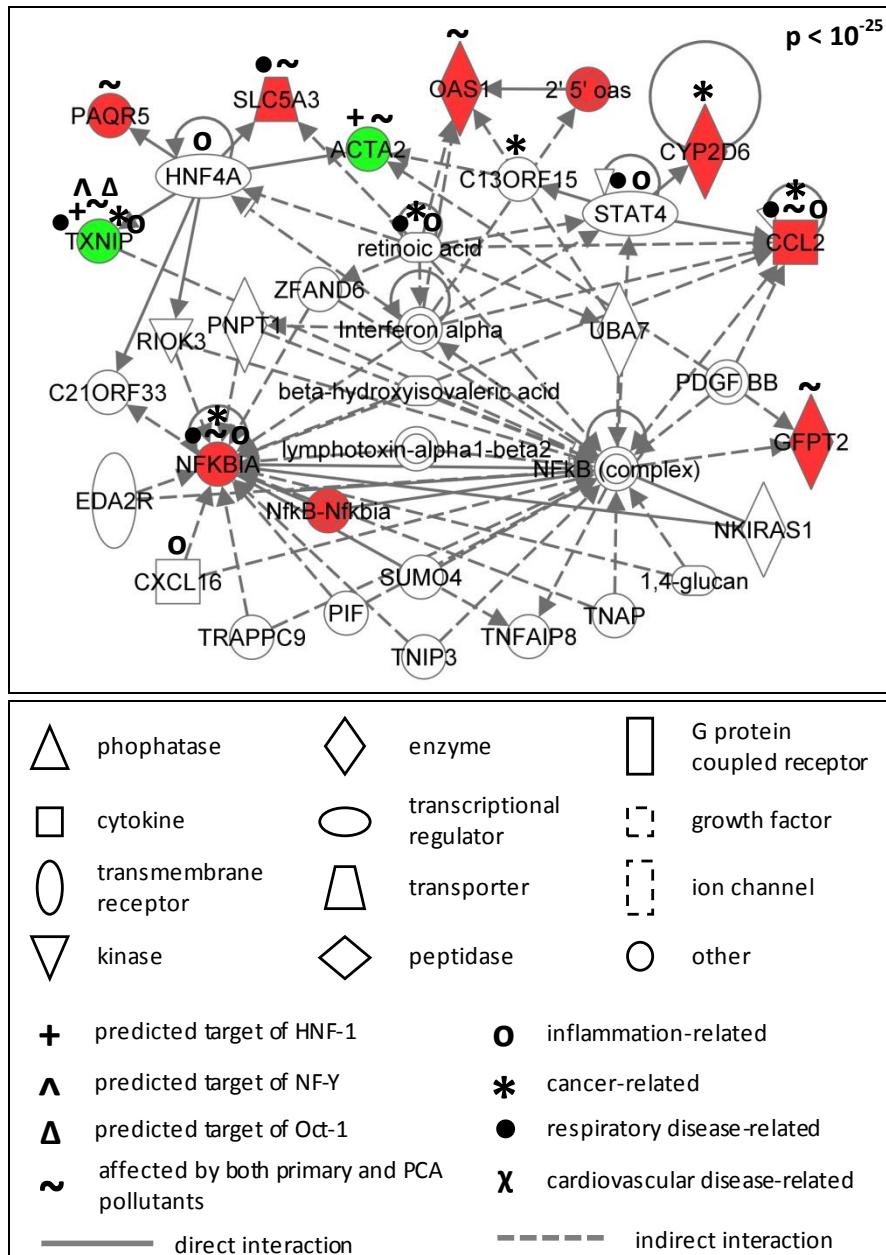
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Supplemental Material

TABLE OF CONTENTS

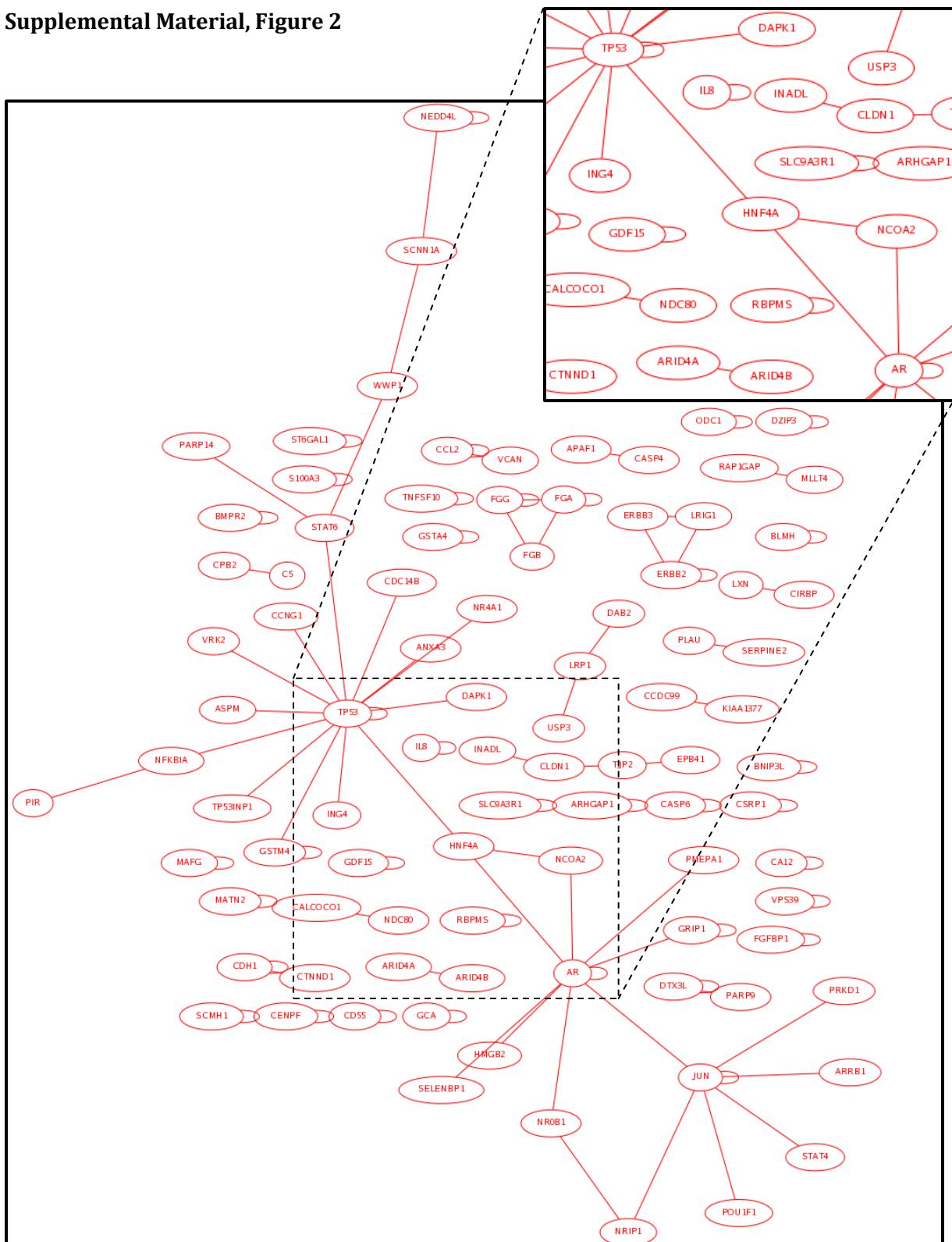
Supplemental Material, Figure 1: Primary pollutant-associated network with HNF4 α signaling ...	3
Supplemental Material, Figure 2: Network interactions associated with PCA pollutants involving HNF4 α , as identified through g:Profiler.....	4
Supplemental Material, Figure 3: IL-8 and AP-1 network associated with PCA pollutants.....	5
Supplemental Material, Figure 4: Biological functions significantly associated with primary and PCA pollutant exposure.....	6
Supplemental Material, Figure 5: A common molecular network modulated by exposure to cigarette smoke or photochemically altered (PCA) air pollutants.....	7
Supplemental Material, Table 1: Volatile organic compounds detected through gas chromatography throughout the experiment day.....	8
Supplemental Material, Table 2: Genes identified as significantly differentially expressed upon exposure to primary or photochemically altered (PCA) pollutants.....	10
Supplemental Material, Table 3: Network proteins associated with exposure to (A) primary and (B) photochemically altered (PCA) pollutant mixtures.....	29
Supplemental Material, Table 4: Disease categories identified by DAVID analysis as enriched in cells exposed to (A) primary pollutants, and (B) PCA pollutants.....	32
Supplemental Material, Table 5: Transcription factors predicted to regulate genes modified upon exposure to (A) both primary and PCA pollutants, (B) primary pollutants, and (C) PCA pollutant mixtures.....	33
Supplemental Material, Table 6: Genes commonly differentially expressed upon exposure to photochemically altered (PCA) pollutants or cigarette smoke (CS).....	43
REFERENCES	45

Supplemental Material, Figure 1



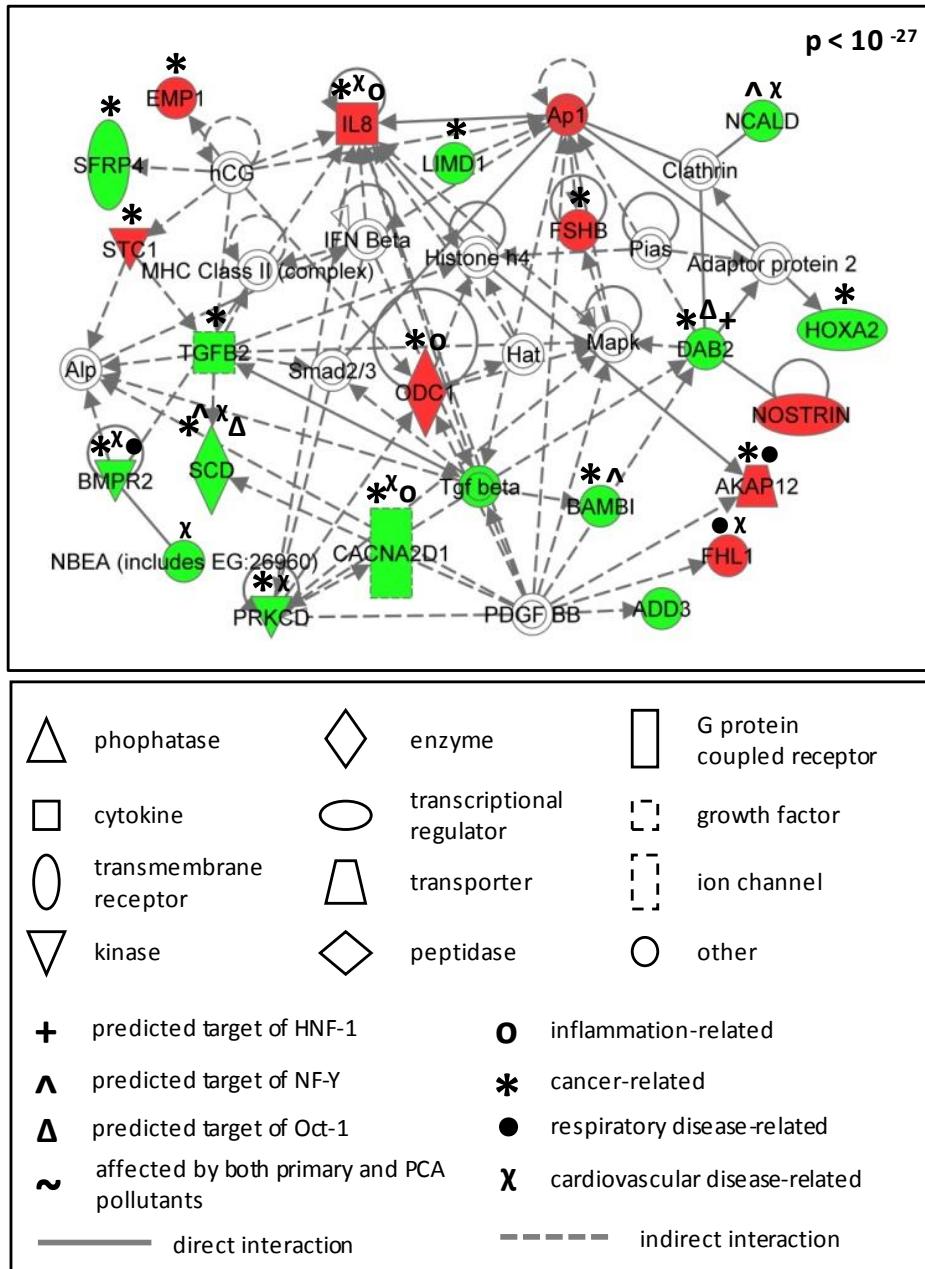
Supplemental Material, Figure 1: Primary pollutant-associated network with HNF4 α signaling. Network is displayed with symbols representing protein products of genes that are up-regulated (red symbols), down-regulated (green symbols), or associated with the differentially expressed genes (clear symbols).

Supplemental Material, Figure 2



Supplemental Material, Figure 2: Network interactions associated with PCA pollutants involving HNF4 α , as identified through g:Profiler. Protein-protein maps illustrate known interactions (as annotated in the BioGrid database) between proteins encoded by genes differentially expressed from PCA pollutant exposure (g:Profiler 2011, Reimand et al. 2007).

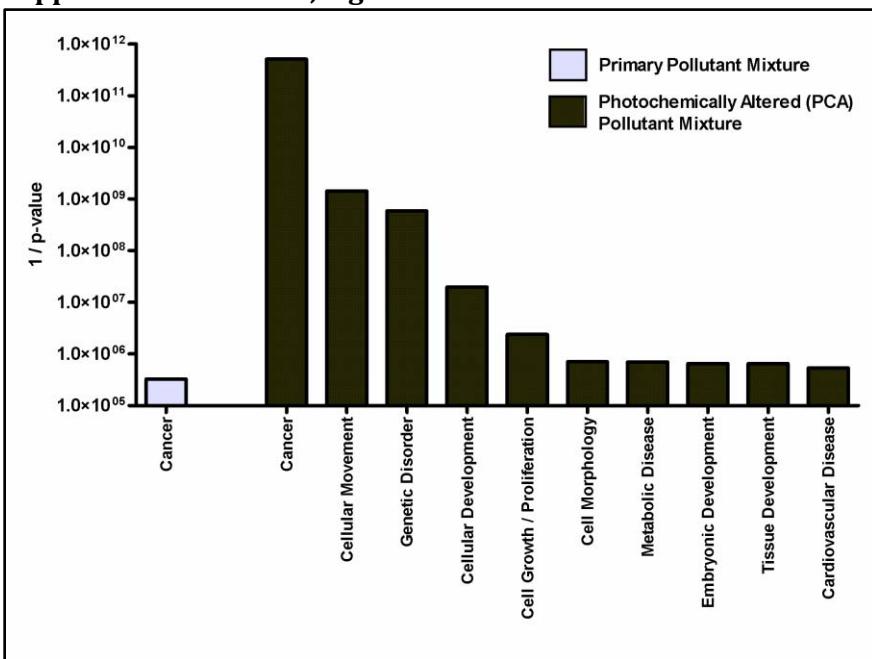
Supplemental Material, Figure 3



Supplemental Material, Figure 3: IL-8 and AP-1 network associated with PCA pollutants.

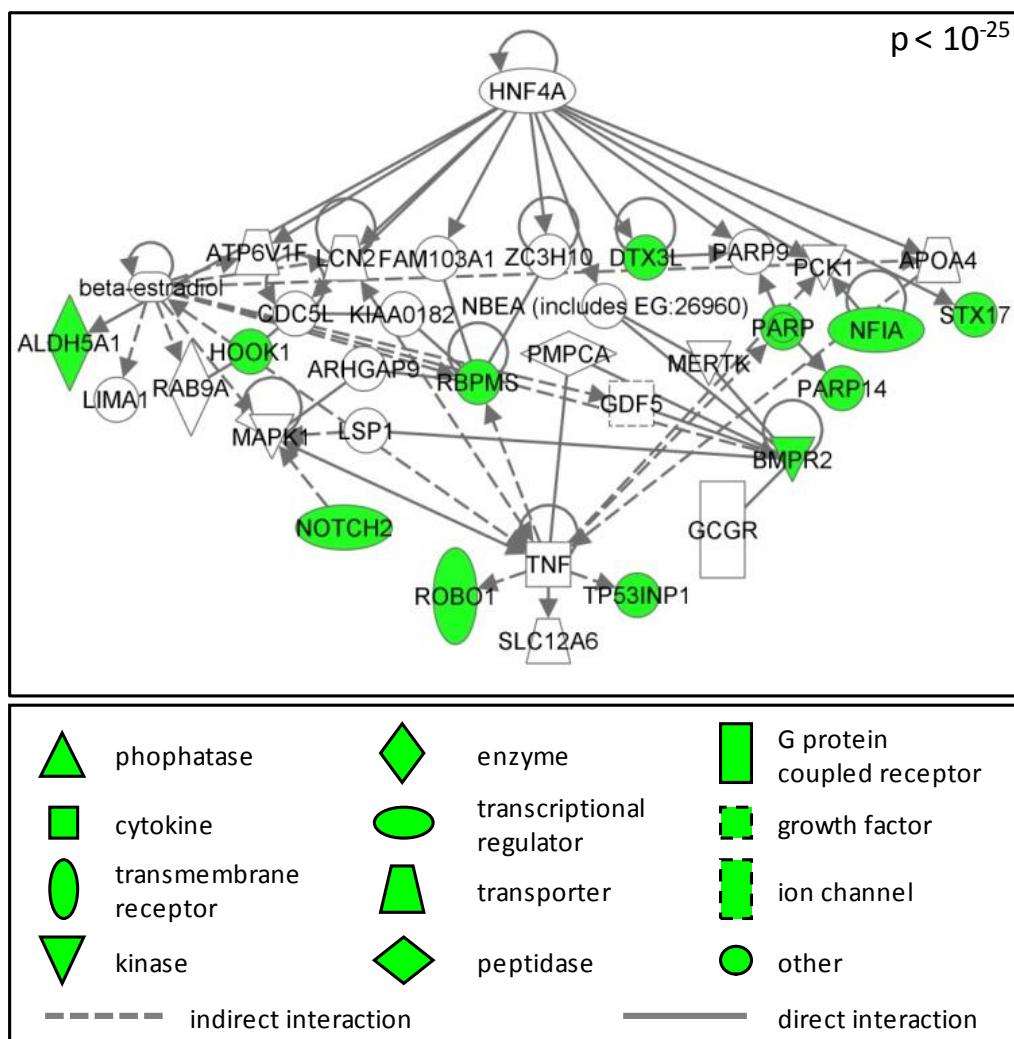
Network is displayed with symbols representing protein products of genes that are up-regulated (red symbols), down-regulated (green symbols), or associated with the differentially expressed genes (clear symbols).

Supplemental Material, Figure 4



Supplemental Material, Figure 4: Biological functions significantly associated with primary and PCA pollutant exposure.

Supplemental Material, Figure 5



Supplemental Material, Figure 5: A common molecular network modulated by exposure to cigarette smoke or photochemically altered (PCA) air pollutants. This protein network displays the most significant network predicted to be altered in lung cells exposed to cigarette smoke (Maunder et al. 2007) or PCA pollutants. The network is displayed with symbols representing protein products of genes that down-regulated (green symbols) in response to both PCA and cigarette smoke, or associated with the differentially expressed genes (clear symbols).

Supplemental Material, Table 1: Volatile organic compounds detected through gas chromatography throughout the experiment day. Values are weighted averages taken from samples collected at 8:45 AM, 10:00 AM, 12:40 PM, 4:42 PM, and 5:57 PM.

Chemical	Chemical Group	Primary Pollutant Exposure (ppmC) (8:15 AM - 12:15 PM)	PCA Pollutant Exposure (ppmC) (4:30 PM - 8:30 PM)
propane/propene	85% alkane, 15% alkene	0.101	0.055
isobutane	alkane	0.035	0.026
butane	alkane	0.113	0.039
isopentane	alkane	0.137	0.040
n-pentane	alkane	0.086	0.022
2-methylpentane	alkane	0.033	0.019
3-methylpentane	alkane	0.024	0.009
n-hexane	alkane	0.015	0.015
methylcyclopentane	alkane	0.018	0.000
cyclohexane	alkane	0.015	0.006
2,3-dimethyl-pentane	alkane	0.028	0.016
3-methylhexane	alkane	0.065	0.036
2,2,4-trimethylpentane	alkane	0.028	0.019
n-heptane	alkane	0.033	0.017
methylcyclohexane	alkane	0.009	0.004
2,5-dimethylhexane	alkane	0.020	0.009
2,3,4-trimethylpentane	alkane	0.018	0.009
n-octane	alkane	0.021	0.010
n-nonane	alkane	0.029	0.012
4-methylnonane	alkane	0.032	0.013
n-decane	alkane	0.028	0.011
c-2-pentene	alkene	0.004	0.000
2,3,3-trimethyl-1-butene	alkene	0.030	0.000
1-octene	alkene	0.011	0.000
1-nonene	alkene	0.010	0.000
a-pinene	alkene	0.006	0.000
benzene	aromatic	0.035	0.031
toluene	aromatic	0.121	0.073
ethylbenzene	aromatic	0.022	0.010
m-xylene	aromatic	0.059	0.018

Chemical	Chemical Group	Primary Pollutant Exposure (ppmC) (8:15 AM - 12:15 PM)	PCA Pollutant Exposure (ppmC) (4:30 PM - 8:30 PM)
o-xylene	aromatic	0.022	0.009
n-propylbenzene	aromatic	0.019	0.008
m-ethyltoluene	aromatic	0.013	0.001
p-ethyltoluene	aromatic	0.021	0.010
1,2,4-trimethylbenzene	aromatic	0.090	0.019
sec-butylbenzene	aromatic	0.017	0.006
1,3-diethylbenzene	aromatic	0.028	0.008
1,2,3,5-tetramethylbenzene	aromatic	0.005	0.000

Supplemental Material, Table 2: Genes identified as significantly* differentially expressed upon exposure to primary or photochemically altered (PCA) pollutants.

Dashes (-) indicate insignificant changes in expression.

* Fold change ≥ 1.5 or ≤ -1.5 , p-value < 0.05 , q-value < 0.05

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>A1CF</i>	-	-	-1.81	0.00276
<i>ABCA1</i>	-	-	-1.56	0.00494
<i>ABCA12</i>	-	-	-1.60	0.00261
<i>ABCA5</i>	-	-	-1.90	0.00149
<i>ABCB6</i>	-	-	-1.70	0.00001
<i>ABCC4</i>	-	-	-1.59	0.00002
<i>ABCG2</i>	-	-	-1.57	0.00124
<i>ACAD10</i>	-	-	-1.78	0.00075
<i>ACAD11</i>	-	-	-1.55	0.00078
<i>ACSM3</i>	-1.50	0.00606	-2.33	0.00038
<i>ACSS2</i>	-	-	-1.54	0.00001
<i>ACTA2</i>	-1.58	0.01055	-2.00	0.00239
<i>ADD3</i>	-	-	-1.98	0.00022
<i>ADH1C</i>	-	-	-1.71	0.04174
<i>ADH6</i>	-	-	-2.12	0.00168
<i>ADHFE1</i>	-	-	-1.51	0.01654
<i>AHCYL1</i>	-	-	-1.60	0.00109
<i>AK3L1</i>	-	-	-1.99	0.00053
<i>AK7</i>	-	-	-2.18	0.00040
<i>AKAP12</i>	-	-	1.67	0.00192
<i>AKAP9</i>	-	-	-1.73	0.00219
<i>AKR1B1</i>	-	-	1.55	0.00102
<i>ALDH5A1</i>	-	-	-1.51	0.00686
<i>ALDH6A1</i>	-	-	-2.50	0.00005
<i>ALPK1</i>	-	-	-1.82	0.00084
<i>ALS2CR8</i>	-	-	-1.55	0.03130
<i>AMPD1</i>	-	-	1.49	0.00723
<i>ANG</i>	-	-	-1.92	0.00069
<i>ANKRA2</i>	-	-	-1.82	0.00414
<i>ANKRD1</i>	-	-	1.68	0.01161
<i>ANKRD18A</i>	-	-	-1.51	0.01560
<i>ANKRD22</i>	-	-	2.88	0.00045
<i>ANKRD30A</i>	-	-	-1.87	0.00110

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>ANKS4B</i>	-	-	-1.65	0.00036
<i>AN05</i>	-	-	-1.52	0.00979
<i>ANXA10</i>	-	-	1.69	0.00491
<i>ANXA13</i>	-	-	-1.68	0.00414
<i>ANXA3</i>	-	-	1.91	0.00053
<i>ANXA4</i>	-	-	-1.64	0.00035
<i>ANXA9</i>	-	-	-1.70	0.00337
<i>AP1S3</i>	-	-	1.80	0.00005
<i>APAF1</i>	-	-	-1.52	0.00074
<i>APH1B</i>	-	-	-1.52	0.00342
<i>APOBEC3C</i>	-	-	-1.52	0.00212
<i>APOH</i>	-	-	-1.56	0.00202
<i>AQP3</i>	-	-	1.79	0.00023
<i>AR</i>	-	-	-1.79	0.00008
<i>AREG</i>	-	-	3.22	0.00010
<i>ARFGAP2</i>	-	-	-1.55	0.00108
<i>ARHGAP1</i>	-	-	-1.54	0.00038
<i>ARID4A</i>	-	-	-1.67	0.00244
<i>ARID4B</i>	-	-	-1.53	0.00671
<i>ARID5B</i>	-	-	-1.60	0.00007
<i>ARL15</i>	-	-	-1.69	0.00037
<i>ARMCX3</i>	-	-	-1.58	0.00332
<i>ARRB1</i>	-	-	-1.63	0.00000
<i>ARSD</i>	-	-	-1.60	0.00019
<i>ARSE</i>	-	-	-1.93	0.00001
<i>AS3MT</i>	-	-	-1.76	0.00281
<i>ASAM</i>	-	-	1.91	0.00731
<i>ASPM</i>	-	-	-1.83	0.00018
<i>ATF6B</i>	-	-	-1.52	0.00112
<i>ATG2B</i>	-	-	-1.58	0.00018
<i>ATP8B1</i>	-1.52	0.02013	-2.95	0.00063
<i>ATP9A</i>	-	-	-1.80	0.00014
<i>AXL</i>	-	-	1.72	0.00217
<i>BAMBI</i>	-	-	-1.72	0.00027
<i>BBS9</i>	-	-	-1.59	0.01465
<i>BCAS3</i>	-	-	-1.71	0.00032
<i>BCL2L11</i>	-	-	-2.10	0.00011
<i>BCL2L15</i>	-	-	-1.85	0.01002

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>BCMO1</i>	-	-	-2.49	0.00009
<i>BDH2</i>	-	-	-1.58	0.00797
<i>BDKRB1</i>	-	-	-1.57	0.00003
<i>BDKRB2</i>	-	-	-1.67	0.00396
<i>BLMH</i>	-	-	-1.51	0.00475
<i>BMPR2</i>	-	-	-1.82	0.00290
<i>BNIP3L</i>	-	-	-1.55	0.00010
<i>BTBD11</i>	-	-	-1.76	0.00003
<i>BTN3A1</i>	-	-	-1.73	0.00562
<i>BTN3A3</i>	-	-	-1.58	0.00015
<i>C10orf114</i>	-	-	1.61	0.00440
<i>C10orf57</i>	-	-	-1.70	0.00847
<i>C12orf27</i>	-	-	-1.91	0.00166
<i>C14orf106</i>	-	-	-1.55	0.02065
<i>C15orf51</i>	-	-	-1.57	0.01539
<i>C18orf58</i>	-	-	-1.61	0.00275
<i>C1orf63</i>	-	-	-1.64	0.00036
<i>C1RL</i>	-	-	-2.01	0.00000
<i>C1S</i>	-	-	-1.59	0.00003
<i>C20orf19</i>	-	-	-1.60	0.00380
<i>C20orf194</i>	-	-	-1.75	0.00203
<i>C20orf74</i>	-	-	-1.87	0.00071
<i>C4orf18</i>	-	-	-2.25	0.00219
<i>C4orf34</i>	-	-	-1.61	0.00130
<i>C5</i>	-	-	-2.07	0.00044
<i>C5orf26</i>	-	-	-1.50	0.00269
<i>C5orf42</i>	-	-	-1.64	0.00225
<i>C6orf130</i>	-	-	-1.54	0.00364
<i>C6orf191</i>	-	-	1.58	0.00075
<i>C7orf11</i>	-	-	1.63	0.00256
<i>C7orf68</i>	-	-	-1.53	0.00114
<i>C9orf3</i>	-	-	-2.13	0.00103
<i>CA12</i>	-	-	-1.52	0.00010
<i>CABYR</i>	-	-	-1.67	0.00169
<i>CACNA1D</i>	-	-	-1.87	0.00156
<i>CACNA2D1</i>	-	-	-1.52	0.00198
<i>CALB1</i>	-	-	1.62	0.02927
<i>CALCOCO1</i>	-	-	-1.54	0.00013

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>CAMK2D</i>	-	-	-1.82	0.00122
<i>CASP4</i>	-	-	-1.63	0.00331
<i>CASP6</i>	-	-	-1.60	0.00474
<i>CCBE1</i>	-	-	1.95	0.00131
<i>CCBL2</i>	-	-	-1.74	0.00035
<i>CCDC144A</i>	-	-	-1.55	0.00054
<i>CCDC28A</i>	-	-	-1.56	0.00767
<i>CCDC34</i>	-	-	-1.59	0.00058
<i>CCDC80</i>	-	-	-1.64	0.00112
<i>CCDC99</i>	-	-	1.60	0.00285
<i>CCL2</i>	1.79	0.00249	1.96	0.00143
<i>CCNG1</i>	-	-	-1.52	0.00018
<i>CCNG2</i>	-	-	-1.98	0.00375
<i>CCPG1</i>	-	-	-1.58	0.00182
<i>CD177</i>	-	-	1.95	0.03989
<i>CD209</i>	-	-	1.50	0.02235
<i>CD55</i>	-	-	1.79	0.00225
<i>CD99L2</i>	-	-	-1.61	0.00007
<i>CDC14B</i>	-	-	-1.52	0.01131
<i>CDC25C</i>	-	-	-1.53	0.00153
<i>CDCA7L</i>	-	-	-1.54	0.00104
<i>CDCP1</i>	-	-	1.90	0.00178
<i>CDH1</i>	-	-	-2.16	0.00002
<i>CDK5RAP3</i>	-	-	-1.67	0.00070
<i>CDRT1</i>	1.59	0.01225	-	-
<i>CEACAM1</i>	-	-	-1.84	0.00148
<i>CEACAM5</i>	-	-	1.52	0.00019
<i>CENPF</i>	-	-	-1.55	0.00048
<i>CEP152</i>	-	-	-1.55	0.00683
<i>CEP70</i>	-	-	-1.75	0.00426
<i>CFH</i>	-	-	-1.71	0.00089
<i>CFHR1</i>	-	-	-2.19	0.02652
<i>CFHR3</i>	-	-	-1.85	0.00017
<i>CFI</i>	-	-	-1.66	0.00250
<i>CIR1</i>	-	-	-1.55	0.00185
<i>CIRBP</i>	-	-	-1.88	0.00006
<i>CLDN1</i>	-	-	1.65	0.00159
<i>CLMN</i>	-	-	-1.66	0.00034

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>CNNM2</i>	-	-	-1.53	0.00028
<i>CORO2A</i>	-	-	-1.72	0.00068
<i>COTL1</i>	-	-	1.51	0.00228
<i>CPA4</i>	-	-	1.59	0.00746
<i>CPB2</i>	-	-	-1.69	0.01898
<i>CPN1</i>	-	-	-2.02	0.00108
<i>CRBN</i>	-	-	-1.52	0.00023
<i>CSGALNACT2</i>	-	-	1.59	0.00058
<i>CSRPI</i>	-	-	1.70	0.00046
<i>CST1</i>	-	-	1.77	0.01150
<i>CTDSP2</i>	-	-	-1.76	0.00009
<i>CTNND1</i>	-	-	-1.56	0.00021
<i>CTPS</i>	-	-	1.80	0.00187
<i>CTTNBP2</i>	-	-	-1.57	0.00047
<i>CXCL5</i>	-	-	2.43	0.00092
<i>CYB5A</i>	-	-	-1.55	0.00014
<i>CYBRD1</i>	-	-	-1.54	0.00007
<i>CYFIP2</i>	-	-	-1.66	0.00007
<i>CYHR1</i>	-	-	-1.91	0.00028
<i>CYP2D6</i>	1.63	0.04999	-	-
<i>CYP4F11</i>	-	-	-1.66	0.00038
<i>CYP4F12</i>	-	-	-1.54	0.00544
<i>CYP4F3</i>	-	-	-1.75	0.00058
<i>DAB2</i>	-	-	-1.70	0.00070
<i>DAPK1</i>	-	-	-1.77	0.00001
<i>DCDC2</i>	-	-	-1.56	0.00069
<i>DCDC5</i>	-	-	-1.76	0.00020
<i>DCLK1</i>	-	-	1.90	0.00068
<i>DEPDC4</i>	-	-	-1.53	0.03365
<i>DEPDC6</i>	-	-	-2.18	0.00003
<i>DET1</i>	-	-	-1.58	0.00028
<i>DGCR6</i>	-	-	1.52	0.02151
<i>DHCR24</i>	-	-	-1.51	0.00004
<i>DHFR</i>	-	-	1.81	0.01212
<i>DHRS3</i>	-	-	-3.69	0.00017
<i>DHRS9</i>	-	-	1.56	0.02798
<i>DHX37</i>	-	-	1.60	0.00006
<i>DIAPH2</i>	-	-	-1.53	0.00949

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>DMXL2</i>	-	-	-1.71	0.00070
<i>DNAJB4</i>	-	-	-1.55	0.01249
<i>DND1</i>	-	-	1.52	0.02165
<i>DPT</i>	-	-	1.53	0.02035
<i>DPYD</i>	-	-	-1.53	0.00512
<i>DTX3L</i>	-	-	-1.86	0.00046
<i>DUSP1</i>	-	-	1.65	0.00089
<i>DUSP4</i>	-	-	1.52	0.00138
<i>DUSP5</i>	-	-	1.79	0.00028
<i>DYNC2H1</i>	-	-	-1.63	0.00337
<i>DZIP3</i>	-	-	-1.55	0.01019
<i>ECE1</i>	-	-	-1.59	0.00002
<i>EFHC1</i>	-	-	-1.55	0.00639
<i>EFNA1</i>	-	-	-1.79	0.00405
<i>EFNB2</i>	-	-	1.61	0.00046
<i>EHHADH</i>	-	-	-1.61	0.00032
<i>EIF2C4</i>	-	-	-1.52	0.00280
<i>EIF4B</i>	-	-	-1.68	0.00510
<i>ELF3</i>	-	-	-1.77	0.00003
<i>ELMO1</i>	-	-	-1.94	0.00006
<i>ELOVL6</i>	-	-	-1.56	0.00533
<i>ELP4</i>	-	-	-1.52	0.00125
<i>EML4</i>	-	-	-1.52	0.00001
<i>EMP1</i>	-	-	1.84	0.00096
<i>ENTPD5</i>	-	-	-1.62	0.00211
<i>EPB41</i>	-	-	-1.51	0.00242
<i>EPB41L4A</i>	-	-	-1.80	0.00023
<i>EPHA2</i>	-	-	1.60	0.00280
<i>EPHX2</i>	-	-	-1.90	0.00134
<i>ERAP1</i>	-	-	-1.53	0.00020
<i>ERBB2</i>	-	-	-1.77	0.00002
<i>ERBB3</i>	-	-	-2.33	0.00023
<i>EREG</i>	-	-	2.83	0.00013
<i>ESSPL</i>	-	-	1.60	0.01585
<i>FAM105A</i>	-	-	-1.55	0.03236
<i>FAM111A</i>	-	-	-1.69	0.00133
<i>FAM149A</i>	-	-	-1.76	0.00333
<i>FAM149B1</i>	-	-	-1.52	0.00208

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>FAM175A</i>	-	-	-1.55	0.00181
<i>FAM185A</i>	-	-	-1.56	0.04457
<i>FAM38B</i>	-	-	-1.88	0.00154
<i>FAM55C</i>	-	-	-1.55	0.00081
<i>FAM74A3</i>	-	-	1.53	0.00197
<i>FARP2</i>	-	-	-1.72	0.00120
<i>FBXO32</i>	-	-	-1.84	0.03748
<i>FBXO40</i>	-	-	1.51	0.02732
<i>FCHSD2</i>	-	-	-1.66	0.00440
<i>FGA</i>	-	-	-1.81	0.00031
<i>FGB</i>	-	-	-1.88	0.00010
<i>FGFBP1</i>	-	-	3.85	0.00009
<i>FGFR4</i>	-	-	-1.71	0.00013
<i>FGG</i>	-	-	-1.80	0.00209
<i>FHL1</i>	-	-	1.66	0.00166
<i>FKBP5</i>	-	-	-1.53	0.00162
<i>FLI1</i>	-	-	1.52	0.04567
<i>FLJ11292</i>	-	-	1.52	0.00547
<i>FLJ35848</i>	-	-	-1.54	0.03243
<i>FLJ41484</i>	-	-	-1.56	0.02264
<i>FLJ44124</i>	-	-	-1.55	0.00060
<i>FLOT1</i>	-	-	-1.65	0.00036
<i>FMN1</i>	-	-	-1.53	0.02740
<i>FM05</i>	-	-	-2.14	0.00015
<i>FNBP1L</i>	-	-	-1.54	0.00003
<i>FNIP1</i>	-	-	-1.84	0.00347
<i>FOXN3</i>	-	-	-1.72	0.01025
<i>FRAS1</i>	-	-	-1.53	0.00459
<i>FRK</i>	-	-	-2.00	0.00024
<i>FRMD3</i>	-	-	1.69	0.00082
<i>FSHB</i>	-	-	1.51	0.01644
<i>FSTL5</i>	-	-	1.70	0.00515
<i>FZD7</i>	-	-	-1.82	0.00001
<i>GAB1</i>	-	-	-1.53	0.02435
<i>GABARAPL1</i>	-	-	-1.69	0.00401
<i>GABPA</i>	-	-	2.01	0.00008
<i>GABRA5</i>	-	-	1.84	0.00003
<i>GABRE</i>	-	-	-1.76	0.01005

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>GALNT12</i>	-	-	-1.56	0.00227
<i>GALNT4</i>	-	-	-1.65	0.00138
<i>GATM</i>	-	-	-1.53	0.00008
<i>GATS</i>	-	-	-1.71	0.00017
<i>GATSL1</i>	-	-	-1.68	0.00014
<i>GCA</i>	-	-	-1.66	0.02017
<i>GCOM1</i>	1.51	0.01963	1.52	0.01866
<i>GDF15</i>	-	-	1.60	0.01375
<i>GFPT2</i>	1.60	0.00208	2.78	0.00010
<i>GIP</i>	-	-	-1.59	0.00122
<i>GK</i>	-	-	-2.16	0.00005
<i>GLIPR1</i>	-	-	2.20	0.00018
<i>GLS</i>	-	-	1.54	0.00035
<i>GLTSCR2</i>	-	-	-1.59	0.00000
<i>GPAM</i>	-	-	2.35	0.02748
<i>GPRC5A</i>	-	-	1.68	0.00057
<i>GPRC5B</i>	-	-	-2.33	0.00020
<i>GRAMD1A</i>	-	-	-1.59	0.00031
<i>GREM2</i>	-	-	1.56	0.00011
<i>GRIP1</i>	-	-	-1.54	0.00589
<i>GSTA4</i>	-	-	-1.54	0.00194
<i>GSTM4</i>	-	-	-1.76	0.00138
<i>GTF2IRD2</i>	-	-	-1.53	0.00006
<i>GUCY1B2</i>	-	-	-1.55	0.02367
<i>HABP2</i>	-	-	-1.53	0.00125
<i>HAO1</i>	-	-	-1.52	0.01414
<i>HAS2</i>	-	-	2.19	0.00276
<i>HBEGF</i>	-	-	1.69	0.00043
<i>HBP1</i>	-	-	-1.88	0.00002
<i>HERC6</i>	-	-	-1.68	0.00007
<i>HFE</i>	-	-	-1.93	0.00003
<i>HGD</i>	-	-	-1.86	0.00098
<i>HIST1H1C</i>	-	-	-1.54	0.00009
<i>HIST1H2AB</i>	-	-	-1.63	0.00019
<i>HIST1H2AC</i>	-	-	-1.57	0.00023
<i>HIST1H2AG</i>	-	-	-1.56	0.00076
<i>HIST1H2AI</i>	-	-	-1.65	0.00306
<i>HIST1H2BM</i>	-	-	-1.51	0.00152

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>HIST1H3A</i>	-	-	-1.61	0.00256
<i>HIST1H3E</i>	-	-	-1.54	0.01168
<i>HIST1H3H</i>	-	-	-1.75	0.00148
<i>HIST1H3J</i>	-	-	-1.68	0.00053
<i>HIST1H4E</i>	-	-	-1.60	0.00275
<i>HIST1H4H</i>	-	-	-1.71	0.00050
<i>HIST2H2AA3</i>	-	-	-1.52	0.00014
<i>HIST2H2AB</i>	-	-	-1.62	0.00076
<i>HIST2H2BF</i>	-	-	-1.52	0.00093
<i>HIST2H4A</i>	-	-	-1.72	0.00023
<i>HMGB2</i>	-	-	-1.58	0.00755
<i>HMGCL</i>	-	-	-2.08	0.00131
<i>HNF4A</i>	-	-	-1.71	0.00002
<i>HNF4G</i>	-	-	-1.66	0.00086
<i>HOOK1</i>	-	-	-1.61	0.00180
<i>HOOK3</i>	-	-	-1.79	0.00433
<i>HOXA2</i>	-	-	-1.56	0.00149
<i>HP1BP3</i>	-	-	-1.57	0.00116
<i>HSD17B11</i>	-	-	-1.62	0.00054
<i>HSD17B6</i>	-	-	-1.50	0.04876
<i>HSPH1</i>	-	-	1.57	0.00072
<i>HTR1A</i>	-	-	1.64	0.01235
<i>HTR3D</i>	-	-	1.54	0.01543
<i>ID1</i>	-	-	-1.55	0.00006
<i>IER3</i>	-	-	1.56	0.01359
<i>IFI35</i>	-	-	-1.66	0.00049
<i>IFIT1</i>	-	-	-2.12	0.00579
<i>IFT81</i>	-	-	-1.62	0.00776
<i>IGHA1</i>	-	-	1.50	0.00025
<i>IGKC</i>	-	-	1.69	0.00480
<i>IL11</i>	-	-	1.85	0.01698
<i>IL8</i>	-	-	1.60	0.00007
<i>INA</i>	-	-	1.64	0.00039
<i>INADL</i>	-	-	-1.64	0.00020
<i>ING4</i>	-	-	-1.55	0.00015
<i>IP6K2</i>	-	-	-1.55	0.00025
<i>IQGAP2</i>	-	-	-1.97	0.00035
<i>ITGA3</i>	-	-	1.67	0.00115

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>ITGA6</i>	-	-	1.61	0.00050
<i>ITGB8</i>	-	-	1.52	0.03105
<i>ITGBL1</i>	-	-	1.56	0.00139
<i>ITPR2</i>	-	-	-1.86	0.00137
<i>JUN</i>	-	-	1.69	0.00013
<i>KCNK5</i>	-	-	-1.53	0.00055
<i>KCNT2</i>	-	-	-1.75	0.00295
<i>KDM3A</i>	-	-	-1.50	0.00034
<i>KIAA0922</i>	-	-	-1.73	0.00115
<i>KIAA1109</i>	-	-	-1.59	0.00023
<i>KIAA1147</i>	-	-	-1.91	0.00001
<i>KIAA1161</i>	-	-	-1.66	0.00119
<i>KIAA1199</i>	-	-	1.66	0.00915
<i>KIAA1370</i>	-	-	-2.70	0.00016
<i>KIAA1377</i>	-	-	-1.52	0.00437
<i>KIAA1618</i>	-	-	-1.53	0.00043
<i>KIAA1632</i>	-	-	-1.55	0.00050
<i>KIAA1712</i>	-	-	-1.60	0.00490
<i>KIF13B</i>	-	-	-1.56	0.00016
<i>KIF20A</i>	-	-	-1.57	0.00062
<i>KIF20B</i>	-	-	-1.52	0.02541
<i>KIR2DL5A</i>	-	-	1.51	0.04814
<i>KLHDC2</i>	-	-	-2.08	0.00016
<i>KLHL24</i>	-	-	-2.44	0.00010
<i>KRT38</i>	-	-	1.57	0.01687
<i>KRT80</i>	-	-	1.68	0.00320
<i>LAMC2</i>	-	-	2.74	0.00002
<i>LARGE</i>	-	-	-1.53	0.00001
<i>LBA1</i>	-	-	-1.93	0.00099
<i>LETMD1</i>	-	-	-1.72	0.00011
<i>LHX8</i>	-	-	-1.68	0.00030
<i>LIMA1</i>	-	-	-1.70	0.00084
<i>LIMD1</i>	-	-	-1.51	0.00395
<i>LITAF</i>	-	-	-1.60	0.00000
<i>LM07</i>	-	-	1.61	0.00085
<i>LOC100130581</i>	-	-	-1.51	0.01258
<i>LOC100289668</i>	-	-	-1.73	0.00711
<i>LOC162632</i>	-	-	-1.52	0.00058

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>LOC345258</i>	-	-	1.59	0.00970
<i>LOC440518</i>	-	-	1.51	0.00644
<i>LOC644714</i>	1.72	0.03988	-	-
<i>LOC652493</i>	-	-	1.66	0.00876
<i>LOC729724</i>	-	-	1.51	0.00076
<i>LOXL2</i>	-	-	1.55	0.00171
<i>LRBA</i>	-	-	-1.53	0.00005
<i>LRIG1</i>	-	-	-1.53	0.00104
<i>LRP1</i>	-	-	-1.60	0.00103
<i>LRRFIP1</i>	-	-	1.75	0.00191
<i>LXN</i>	-	-	-3.17	0.00008
<i>LYAR</i>	-	-	1.52	0.01154
<i>LYRM5</i>	-	-	-1.64	0.01013
<i>MAFG</i>	-	-	-1.50	0.00030
<i>MANBA</i>	-	-	-1.55	0.00047
<i>MANSC1</i>	-	-	-1.76	0.00055
<i>MAOA</i>	-	-	-2.04	0.00003
<i>MARCH4</i>	-	-	1.61	0.00392
<i>MARCH8</i>	-	-	-1.57	0.00542
<i>MARCKS</i>	-	-	-1.64	0.00055
<i>MATN2</i>	-	-	-2.00	0.00034
<i>MBOAT1</i>	-	-	-2.24	0.00006
<i>MCCC1</i>	-	-	-1.66	0.00242
<i>MCTP1</i>	-	-	1.61	0.00115
<i>MEIS2</i>	-	-	-1.80	0.00026
<i>MGAM</i>	-	-	-1.54	0.00001
<i>MIA2</i>	-	-	-2.10	0.00458
<i>MICAL2</i>	-	-	1.54	0.00571
<i>MIR21</i>	-	-	-1.56	0.00251
<i>MLEC</i>	-	-	-1.77	0.00001
<i>MLF1</i>	-	-	-1.57	0.01458
<i>MLLT4</i>	-	-	-1.55	0.00085
<i>MR1</i>	-	-	-1.85	0.00105
<i>MRAP2</i>	-	-	-1.58	0.00189
<i>MSI2</i>	-	-	-1.56	0.00022
<i>MST131</i>	-	-	2.14	0.00035
<i>MTMR11</i>	-	-	-1.56	0.00059
<i>MUT</i>	-	-	-1.95	0.00019

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>MYCNOS</i>	-	-	1.56	0.00044
<i>MYEOV</i>	-	-	1.62	0.00574
<i>MYO1A</i>	-	-	-1.66	0.00277
<i>NAGA</i>	-	-	-1.56	0.00399
<i>NAP1L2</i>	-	-	-1.57	0.00312
<i>NAV3</i>	-	-	2.05	0.00442
<i>NBEA</i>	-	-	-1.73	0.00019
<i>NBEAL1</i>	-	-	-1.77	0.00311
<i>NBR1</i>	-	-	-1.55	0.00122
<i>NCALD</i>	-	-	-1.51	0.00015
<i>NCAPD2</i>	-	-	-1.64	0.00007
<i>NCEH1</i>	-	-	1.52	0.00011
<i>NCOA2</i>	-	-	-1.51	0.00336
<i>NDC80</i>	-	-	-1.79	0.00277
<i>NDRG1</i>	-	-	-1.59	0.00516
<i>NDRG2</i>	-	-	-1.51	0.00030
<i>NEB</i>	-	-	-1.76	0.00001
<i>NEDD4L</i>	-	-	-1.98	0.00001
<i>NEK11</i>	-	-	-1.54	0.00645
<i>NFIA</i>	-	-	-1.95	0.00006
<i>NFKBIA</i>	1.51	0.00016	1.53	0.00014
<i>NFKBIZ</i>	-	-	-1.56	0.00523
<i>NID2</i>	-	-	1.77	0.00950
<i>NIPAL3</i>	-	-	-1.54	0.00599
<i>NIPSNAP3A</i>	-	-	-1.67	0.00309
<i>NMNAT2</i>	-	-	1.68	0.00052
<i>NNT</i>	-	-	-1.52	0.00002
<i>NOSTRIN</i>	-	-	1.62	0.00233
<i>NOTCH2</i>	-	-	-1.68	0.00081
<i>NOTCH2NL</i>	-	-	-1.57	0.00049
<i>NPY1R</i>	-	-	-1.74	0.00596
<i>NR0B1</i>	-	-	-1.52	0.00120
<i>NR1D2</i>	-	-	-1.53	0.00500
<i>NR4A1</i>	-	-	1.69	0.00307
<i>NR5A2</i>	-	-	-1.87	0.00024
<i>NRG1</i>	-	-	1.73	0.00057
<i>NRG4</i>	-	-	-1.81	0.00017
<i>NRIP1</i>	-	-	-1.66	0.00006

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>NRM</i>	-	-	-1.57	0.00020
<i>NUDT7</i>	-	-	-1.76	0.00017
<i>NUSAP1</i>	-	-	-1.59	0.00367
<i>OAS1</i>	1.62	0.00085	2.43	0.00008
<i>ODC1</i>	-	-	1.66	0.00054
<i>OPHN1</i>	-	-	-1.96	0.00109
<i>OR10G2</i>	1.55	0.01301	-	-
<i>OR2T1</i>	-	-	1.55	0.01790
<i>OR4A47</i>	1.73	0.00898	1.56	0.01815
<i>OR4C6</i>	-	-	1.91	0.00808
<i>OR4K1</i>	-	-	1.53	0.03161
<i>OR51B4</i>	-	-	1.53	0.02610
<i>OR51D1</i>	1.51	0.01660	-	-
<i>OR51L1</i>	-	-	1.54	0.00304
<i>OR52I2</i>	-	-	1.50	0.04879
<i>OR5AP2</i>	-	-	1.58	0.03335
<i>OR5I1</i>	-	-	1.51	0.02120
<i>OR9A2</i>	-	-	1.50	0.04432
<i>OR9Q2</i>	-	-	1.60	0.00867
<i>OSBPL9</i>	-	-	-1.70	0.00006
<i>OTUD1</i>	-	-	-1.54	0.00205
<i>OXTR</i>	-	-	1.68	0.00105
<i>P2RX4</i>	-	-	-1.73	0.00037
<i>P2RY4</i>	-	-	1.54	0.01409
<i>PAIP2B</i>	-	-	-2.02	0.00175
<i>PAN2</i>	-	-	-1.61	0.00035
<i>PAQR5</i>	1.58	0.00319	2.19	0.00041
<i>PAR5</i>	-	-	-1.63	0.02688
<i>PARP14</i>	-	-	-1.85	0.00301
<i>PARP9</i>	-	-	-2.18	0.00046
<i>PBLD</i>	-	-	-2.57	0.00011
<i>PCCA</i>	-	-	-1.52	0.00462
<i>PCDH9</i>	-	-	-1.56	0.00041
<i>PCMTD1</i>	-	-	-1.66	0.00712
<i>PCMTD2</i>	-	-	-1.66	0.01622
<i>PDCD4</i>	-	-	-2.83	0.00020
<i>PDE3A</i>	-	-	-1.59	0.00000
<i>PDGFC</i>	-	-	-1.62	0.00169

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>PDGFRL</i>	-	-	-1.90	0.00023
<i>PDK2</i>	-	-	-1.76	0.00028
<i>PDPR</i>	-	-	-1.52	0.00073
<i>PDXDC2</i>	-	-	-1.53	0.03412
<i>PDZK1</i>	-	-	-2.25	0.00069
<i>PECR</i>	-	-	-1.55	0.00431
<i>PER2</i>	-	-	-1.55	0.00044
<i>PFKFB3</i>	-	-	-1.83	0.00003
<i>PGAP2</i>	-	-	-1.56	0.00005
<i>PHKB</i>	-	-	-1.65	0.00006
<i>PHLDA1</i>	-	-	1.57	0.00787
<i>PIGN</i>	-	-	-1.57	0.00143
<i>PIR</i>	-	-	-1.55	0.00011
<i>PLAU</i>	-	-	1.75	0.00069
<i>PLCD4</i>	-	-	-1.53	0.03026
<i>PLCH1</i>	-	-	-1.99	0.00005
<i>PLD1</i>	-	-	-1.98	0.00015
<i>PLEK2</i>	-	-	1.75	0.00089
<i>PLEKHH2</i>	-	-	-1.64	0.00354
<i>PMEPA1</i>	-	-	1.51	0.00154
<i>POF1B</i>	-	-	-1.78	0.00037
<i>POU1F1</i>	-	-	1.53	0.01782
<i>PP13439</i>	-	-	-1.57	0.01707
<i>PPFIBP2</i>	-	-	-1.58	0.00008
<i>PRKCD</i>	-	-	-1.67	0.00020
<i>PRKD1</i>	-	-	-1.51	0.00039
<i>PSG8</i>	-	-	1.67	0.02451
<i>PTCH2</i>	-	-	3.64	0.00156
<i>PTGR2</i>	-	-	-1.55	0.00099
<i>PTPLAD2</i>	-	-	-1.73	0.01052
<i>PTRF</i>	-	-	1.65	0.00203
<i>RAB3B</i>	-	-	1.80	0.01271
<i>RAP1GAP</i>	-	-	-1.50	0.00055
<i>RARB</i>	-	-	-2.43	0.00014
<i>RBKS</i>	-	-	-1.61	0.00033
<i>RBM14</i>	-	-	1.51	0.00420
<i>RBPM5</i>	-	-	-1.51	0.00151
<i>REXO1L1</i>	-	-	1.50	0.00607

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>RFC1</i>	-	-	2.82	0.01137
<i>RFX5</i>	-	-	-1.60	0.00110
<i>RHOBTB1</i>	-	-	-1.72	0.00326
<i>RHOBTB3</i>	-	-	-2.60	0.00060
<i>RMRP</i>	-	-	1.51	0.00148
<i>RND1</i>	-	-	-1.70	0.00000
<i>RNF182</i>	-	-	1.80	0.00674
<i>RNF213</i>	-	-	-1.64	0.00071
<i>RNU11</i>	-	-	3.67	0.00002
<i>RNU1A</i>	-	-	2.73	0.00053
<i>ROB01</i>	-	-	-1.63	0.00025
<i>RPPH1</i>	-	-	2.27	0.00040
<i>RPS27L</i>	-	-	-1.54	0.00908
<i>RPS6KA5</i>	-	-	-1.61	0.03867
<i>S100A3</i>	-	-	1.82	0.00190
<i>SAMD7</i>	-	-	1.56	0.01411
<i>SAMD9</i>	-	-	-1.58	0.00962
<i>SASH1</i>	-	-	-1.54	0.00060
<i>SCAPER</i>	-	-	-1.55	0.00306
<i>SCARB1</i>	-	-	-1.59	0.00036
<i>SCARNA17</i>	-	-	-1.71	0.00735
<i>SCARNA9L</i>	-	-	-1.52	0.02066
<i>SCD</i>	-	-	-1.59	0.00047
<i>SCMH1</i>	-	-	-1.88	0.00078
<i>SCNN1A</i>	-	-	-1.50	0.00613
<i>SELENBP1</i>	-	-	-1.64	0.00061
<i>SEMA3C</i>	-	-	1.51	0.00066
<i>SEMA3E</i>	-	-	-1.62	0.00373
<i>SEPT14</i>	-	-	-1.57	0.00871
<i>SERPINA6</i>	-	-	-1.52	0.00385
<i>SERPINB1</i>	-	-	-1.60	0.00030
<i>SERPINB8</i>	-	-	1.53	0.00242
<i>SERPINE2</i>	-	-	2.12	0.00056
<i>SESN3</i>	-	-	-2.96	0.00075
<i>SFRP1</i>	-	-	1.98	0.00127
<i>SFRP4</i>	-	-	-3.15	0.00197
<i>SFRS18</i>	-	-	-1.64	0.00018
<i>SH3BGRL2</i>	-	-	-1.51	0.00173

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>SHMT1</i>	-	-	-1.62	0.00007
<i>SKAP2</i>	-	-	-1.68	0.00063
<i>SLC16A7</i>	-	-	-1.87	0.01007
<i>SLC19A3</i>	-	-	-1.55	0.00100
<i>SLC22A3</i>	-	-	-1.63	0.00131
<i>SLC23A1</i>	-	-	-1.77	0.00003
<i>SLC23A2</i>	-	-	-1.82	0.00014
<i>SLC25A27</i>	-	-	-1.63	0.00072
<i>SLC29A3</i>	-	-	-1.51	0.00096
<i>SLC2A12</i>	-	-	-1.62	0.00055
<i>SLC35D2</i>	-	-	-1.57	0.00050
<i>SLC40A1</i>	-	-	-1.77	0.00003
<i>SLC41A2</i>	-	-	-1.95	0.00481
<i>SLC44A2</i>	-	-	-1.64	0.00225
<i>SLC46A3</i>	-	-	-2.19	0.00010
<i>SLC5A3</i>	1.58	0.00021	1.80	0.00050
<i>SLC7A2</i>	-	-	-1.55	0.00019
<i>SLC9A3R1</i>	-	-	-1.51	0.00002
<i>SLCO4A1</i>	-	-	1.71	0.00150
<i>SLFN5</i>	-	-	-1.93	0.00126
<i>SMOX</i>	-	-	1.71	0.00078
<i>SMPD1</i>	-	-	-1.91	0.00009
<i>SNORA23</i>	-	-	2.06	0.00929
<i>SNORA3</i>	-	-	3.62	0.00002
<i>SNORA42</i>	-	-	6.35	0.00030
<i>SNORA52</i>	-	-	1.56	0.00372
<i>SNORA56</i>	-	-	1.77	0.00060
<i>SNORA71D</i>	-	-	1.60	0.00162
<i>SNORA73A</i>	-	-	1.92	0.01085
<i>SNORD113-3</i>	-	-	1.55	0.02204
<i>SNORD114-2</i>	-	-	1.52	0.00117
<i>SNORD115-11</i>	-	-	1.64	0.02566
<i>SOAT1</i>	-	-	-1.70	0.00056
<i>SOCS2</i>	-	-	1.64	0.00506
<i>SORL1</i>	-	-	-1.73	0.00003
<i>SPANXE</i>	-	-	1.54	0.00193
<i>SPATA18</i>	-	-	-1.57	0.00132
<i>SPATA7</i>	-	-	-1.54	0.00089

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>SPG11</i>	-	-	-1.53	0.00373
<i>SPP1</i>	-	-	-1.51	0.00065
<i>SPRR2B</i>	-	-	1.73	0.04629
<i>SPTLC3</i>	-	-	-1.85	0.00091
<i>SSBP2</i>	-	-	-1.66	0.00118
<i>SSFA2</i>	-	-	1.55	0.00011
<i>ST6GAL1</i>	-	-	-2.01	0.00014
<i>ST8SIA4</i>	-	-	-1.83	0.00152
<i>STAMBPL1</i>	-	-	2.17	0.00034
<i>STAT4</i>	-	-	-2.20	0.00111
<i>STAT6</i>	-	-	-1.51	0.00003
<i>STC1</i>	-	-	1.69	0.00281
<i>STEAP2</i>	-	-	-1.53	0.00016
<i>STRAD</i>	-	-	-1.56	0.00983
<i>STX17</i>	-	-	-1.50	0.00142
<i>SULT2B1</i>	-	-	-1.69	0.00114
<i>SVEP1</i>	-	-	-1.85	0.00007
<i>SYCP2L</i>	-	-	-1.59	0.00681
<i>SYNE2</i>	-	-	-2.41	0.00008
<i>TAF9B</i>	-	-	-1.74	0.00036
<i>TAS2R5</i>	-	-	1.92	0.00015
<i>TBC1D5</i>	-	-	-1.56	0.00100
<i>TBC1D8B</i>	-	-	-1.63	0.00073
<i>TBCK</i>	-	-	-1.83	0.00024
<i>TC2N</i>	-	-	-1.96	0.00089
<i>TCP11L2</i>	-	-	-2.19	0.00000
<i>TFDP2</i>	-	-	-1.79	0.00115
<i>TFPI2</i>	-	-	1.77	0.00075
<i>TGFA</i>	-	-	1.53	0.00335
<i>TGFB2</i>	-	-	-1.67	0.00049
<i>THBD</i>	-	-	1.53	0.00012
<i>THG1L</i>	-	-	-1.56	0.00083
<i>TIGD2</i>	-	-	-1.85	0.00235
<i>TJP2</i>	-	-	-1.52	0.00181
<i>TLR1</i>	-	-	-2.18	0.00124
<i>TLR3</i>	-	-	-1.65	0.04429
<i>TM4SF20</i>	-	-	-2.48	0.00007
<i>TMC5</i>	-	-	-1.51	0.01022

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>TMC7</i>	-	-	-1.64	0.00134
<i>TMEM136</i>	-	-	-1.52	0.00435
<i>TMEM140</i>	-	-	-1.56	0.01972
<i>TMEM144</i>	-	-	-1.81	0.00091
<i>TMEM171</i>	-	-	1.52	0.00509
<i>TMEM202</i>	-	-	1.59	0.04147
<i>TMEM37</i>	-	-	-2.39	0.00015
<i>TMEM50B</i>	-	-	-1.60	0.01620
<i>TMEM60</i>	-	-	-1.59	0.00078
<i>TMEM74</i>	-	-	1.53	0.03446
<i>TNFRSF12A</i>	-	-	1.83	0.00138
<i>TNFSF10</i>	-	-	-2.26	0.00008
<i>TNS4</i>	-	-	2.08	0.00110
<i>TP53</i>	-	-	-1.59	0.00023
<i>TP53INP1</i>	-	-	-2.68	0.00001
<i>TPCN1</i>	-	-	-1.86	0.00077
<i>TRIM31</i>	-	-	-1.84	0.00213
<i>TRIM52</i>	-	-	-1.56	0.02026
<i>TRIML2</i>	-	-	1.60	0.01377
<i>TSKU</i>	-	-	-1.59	0.00001
<i>TSPAN15</i>	-	-	-1.56	0.00043
<i>TST</i>	-	-	-1.54	0.00005
<i>TTC28</i>	-	-	-1.68	0.00006
<i>TTC39B</i>	-	-	-1.63	0.01453
<i>TTLL6</i>	-	-	-1.53	0.00987
<i>TUBB2C</i>	-	-	1.51	0.01846
<i>TXNDC16</i>	-	-	-1.67	0.00328
<i>TXNIP</i>	-1.61	0.01468	-2.43	0.00160
<i>TYR</i>	-	-	1.73	0.03422
<i>UBASH3B</i>	-	-	1.82	0.00084
<i>UGT2B15</i>	-	-	-1.77	0.00178
<i>UIMC1</i>	-	-	1.93	0.00243
<i>UNC119B</i>	-	-	-1.58	0.00219
<i>UNC13B</i>	-	-	-1.59	0.00049
<i>USP17</i>	1.52	0.04976	1.59	0.03729
<i>USP17L2</i>	1.52	0.03727	1.53	0.03761
<i>USP3</i>	-	-	-1.50	0.00022
<i>VCAN</i>	-	-	-1.62	0.00012

Gene Symbol	Primary Pollutant Fold Change (Exposed / Unexposed)	p-value	PCA Pollutant Fold Change (Exposed / Unexposed)	p-value
<i>VIL1</i>	-	-	-1.65	0.00193
<i>VPS13C</i>	-	-	-1.53	0.00114
<i>VPS39</i>	-	-	-1.55	0.00068
<i>VRK2</i>	-	-	-1.53	0.00264
<i>VWC2L</i>	-	-	1.57	0.03979
<i>WDR19</i>	-	-	-1.51	0.00064
<i>WDR69</i>	-	-	1.61	0.02320
<i>WEE1</i>	-	-	-1.93	0.00169
<i>WSB1</i>	-	-	-1.53	0.00269
<i>WWP1</i>	-	-	-1.51	0.00065
<i>XBP1</i>	-	-	-1.54	0.00334
<i>XCL1</i>	-	-	1.66	0.01526
<i>XDH</i>	-	-	1.52	0.00199
<i>YPEL2</i>	-	-	-2.04	0.00002
<i>YPEL5</i>	-	-	-1.93	0.00001
<i>ZBTB20</i>	-	-	-1.86	0.00095
<i>ZC3H6</i>	-	-	-1.52	0.01515
<i>ZFP14</i>	-	-	-1.51	0.01861
<i>ZFYVE1</i>	-	-	-1.54	0.00139
<i>ZKSCAN1</i>	-	-	-1.58	0.00080
<i>ZMYM3</i>	-	-	-1.55	0.00055
<i>ZNF224</i>	-	-	-1.53	0.00287
<i>ZNF234</i>	-	-	-1.52	0.00360
<i>ZNF277</i>	-	-	-1.54	0.00502
<i>ZNF287</i>	-	-	-1.65	0.01718
<i>ZNF292</i>	-	-	-1.62	0.00032
<i>ZNF479</i>	-	-	1.62	0.01404
<i>ZNF594</i>	-	-	-1.57	0.01350
<i>ZNF608</i>	-	-	-1.52	0.01259
<i>ZNF626</i>	-	-	1.87	0.03625
<i>ZNF654</i>	-	-	-1.69	0.01354
<i>ZNF704</i>	-	-	-1.61	0.00041
<i>ZRSR1</i>	-	-	1.51	0.00283
<i>ZSCAN16</i>	-	-	-1.52	0.00316
<i>ZSWIM6</i>	-	-	-1.59	0.00588

Supplemental Material, Table 3: Network proteins associated with exposure to (A) primary and (B) photochemically altered (PCA) pollutant mixtures.

Network Number	Molecules in Network	p-value
(A) Primary Pollutants Network		
1	1,4-glucan,2' 5' oas,ACTA2,beta-hydroxyisovaleric acid,C13ORF15,C21ORF33,CCL2,CXCL16,CYP2D6,EDA2R,GFPT2,HNF4A,Interferon alpha,lymphotoxin-alpha1-beta2,NfkB (complex),NfkB-Nfkbia,NFKBIA,NKIRAS1,OAS1,PAQR5,PDGF BB,PIF,PNPT1,retinoic acid,RIOK3,SLC5A3,STAT4,SUMO4,TNAP,TNFAIP8,TNIP3,TRAPPc9,TXNIP,UBA7,ZFAND6	1E-25
(B) PCA Pollutants Networks		
1	A1CF,BCAS3,CDH1,Ck2,Cyp4f,CYP4F3,CYP4F12,DNAJB4,ELP4,FLJ11292,GLTS CR2,GSTA4,HGD,Histone h3,HNF4A,HNF4G,HOOK3,KIF20A,MYO1A,NMNAT2,PAQR5,PIGN,PPFIBP2,SERPINB8,SLC19A3,SLC22A3,SLC5A3,SPP1,STX17,TBC K,TMEM140,TPCN1,ZNF224,ZNF277,ZSCAN16	1E-52
2	ANXA3,APOH,ASPM,C14ORF106,CALCOCO1,CCDC99,CCNG1,CCNG2,CDC14B,C ENPF,CYFIP2 (includes EG:26999),FAM175A,HIST1H1C,Histone H1,HMGB2, HSPH1,ING4,LETMD1,NBR1,NCAPD2,NDC80,Nuclear factor 1,NUSAP1,P2RX4, PHLDA1,PMEPA1,Ppp2c,PRKAC,ROBO1,Rsk,SCMH1,SH3BGRL2,TP53,TP53IN P1,UIMC1	1E-43
3	ADH6,ADH1C (includes EG:126),ADHFE1,alcohol dehydrogenase,AQP3,AR, ATP9A,C7ORF68,CA12,CCDC80,CDCA7L,CIR1,CTDSP2,DHRS3,DHRS9,EFNB2, FSH,FZD7,GPRC5B,KIF20B,KLHL24,Lh,MAOA,MIR124,NDRG1,NID2,NPY1R,ox idoreductase,PTGR2,RNA polymerase II,SELENBP1,SSFA2,STAT4,TGFA,Vegf	1E-41
4	APH1B,BLMH,C1S,CASP4,CASP6,DTX3L,ECE1,FGFBP1,GLS,GPRC5A,HABP2,IFI 35,IFIT1,IgG,IL1,Immunoglobulin,Interferon alpha,IRG,MICAL2,Mmp,NFKBIA, NGF,OAS1,PARP,PARP9,PARP14,peptidase,PIR,RPS27L (includes EG:51065), S100A3,SERPINE2,SMOX,STAT,STAT6,TNFSF10	1E-35
5	20s proteasome,26s Proteasome,Actin,Alpha tubulin,ARRB1,DIAPH2,DPT, DUSP1,EIF2C4,EIF4B,EPB41,ERBB2,ERBB3,GPAM,HIST2H2AB,HTR1A, ID1,IN A,Insulin,LRIG1,MAP2K1/2,MARCKS (includes EG:4082),MATN2,MCCC1, NDRG2,Notch,NOTCH2,OPHN1,Pkc(s),PP2A,PTCH2,PTRF,SFRP1,TCR,XBP1	1E-35
6	ANKRD1,ANXA13,Cbp,CDK5RAP3 (includes EG:80279),CFHR1,CPB2,CPN1, CXCL5,DUSP5,Elastase,FGA,FGB,FGG,Fibrin,Fibrinogen,GFPT2,HAS2,IER3,IFN TYPE 1,IGKC,IP6K2,LITAF,NfkB (complex),NfkB-RelA,NFKBIZ,PPAR \pm -RXR \pm , Pro-inflammatory Cytokine,RAP1GAP (includes EG:5909),SLC2A12,SOAT1, Stat3-Stat3,THBD,Tlr,TNFRSF12A,TXNIP	1E-32
7	ABCC4,AXL,BCMO1,CD209,CEACAM1,CEACAM5 (includes EG:1048),EML4, Estrogen Receptor,Ferritin,Gm-csf,Growth hormone,HFE,IL12 (complex), JAK,Ldh,LDL,LRP,MIR1,MIR21 (includes EG:406991),NEDD4L,NRG,NRG1, PDCD4,PDE3A,PI3K,PRKD1,SCNN1A,SLC9A3R1,SOCS2,ST6GAL1,STAT5a/b,T NS4,WWP1,XCL1,XDH	1E-29

Network Number	Molecules in Network	p-value
8	14-3-3,AHCYL1,AKAP9,ANKRA2,Calmodulin,CAMK2D,CaMKII,Creb,DET1,DGCR6,EPHX2,FOXN3,FRAS1,GABARAPL1,GABPA,GRIP1,hydrolase,ITPR2,JUN,KIF13B,LRRFIP1,MAFG,NCEH1,Nfat (family),NIPSNAP3A,PER2,PHKB,Pka ,Pka catalytic subunit,Pkg,RFC1,TUBB2C,Tubulin,UNC13B,USP3	1E-29
9	Adaptor protein 2,ADD3,AKAP12,Alp,Ap1,BAMBI,BMPR2,CACNA2D1,Clathrin,DAB2,EMP1,FHL1,FSHB,Hat,hCG,Histone h4,HOXA2,IFN Beta,IL8,LIMD1,Mapk,MHC Class II (complex),NBEA (includes EG:26960),NCALD,NOSTRIN,ODC1,PDGF BB,Pias,PRKCD,SCD,SFRP4,Smad2/3,STC1,Tgf beta,TGFB2	1E-27
10	ABCA1,C3-Cfb,CALB1,Cbp/p300,CD55,CFH,CFI,collagen,DUSP4,EHHADH,FRK,GC-GCR dimer,GDF15,HDL,ITGB8,JINK1/2,Jnk,KDM3A,LXR ligand-LXR-Retinoic acid-RXR \pm ,N-cor,NCOA2,NR0B1,NR4A1,NR5A2,NRIP1,POU1F1,RAB3B,Retinoic acid-RAR-RXR,Rxr,SCARB1,SERPINB1,T3-TR-RXR,Thyroid hormone receptor,VitaminD3-VDR-RXR,VRK2	1E-27
11	ACTA2,Alpha catenin,Cadherin,Calpain,CIRBP,Collagen type I,Collagen(s),CPA4,CTNND1,DAPK1,DCLK1,ERK1/2,Esr1-Esr1-estrogen-estrogen,Fgf,Fgfr,FGFR4,Focal adhesion kinase,Integrin,Integrin \pm ,ITGA3,ITGA6,LAMC2,Laminin,Laminin1,LARGE,LMO7,LXN,MLLT4,OXTR,PDGFC,SMPD1,TFPI2,TSKU,VCAN,Vla-4	1E-25
12	Adaptor protein 1,ALS2CR8,AP1S3 (includes EG:130340),BRF2,CABYR,CDCA7L,CDKN2A,CES2 (includes EG:8824),CYP4F3,CYP4F11,DDX10,ELF3,FAM111A,FETUB,GABRE,HNF4A,HSD17B11,JAK1,LOXL2,MUT,PAN2,PDXDC2,PLEKHA8,retinoic acid,SERPINB8,SLC5A3,STRA6,SUZ12,TBRG1,TCF19,TMEM49,TRIM52,USP30,USP36,ZNF133	1E-23
13	APOL1,ATXN1,AZU1,BTN3A3,C20ORF194,CD86,CD209,CFHR3,CNN1,DPYD,DZIP3,EIF4B,EIF4E,EIF4ENIF1,EMP1,HABP2,heparin,HIVEP1,LAMC2,LHX8,MARCH8,MIR17 (includes EG:406952),phosphatidylinositol 3,4-diphosphate,SAA2,SERPINA6,SERPINE2,SVIL,TBC1D5,TNF,TNFRSF18,TRAF2,TRIM31,TST,XCL1,ZFYVE1	1E-23
14	ARSA,ARSD,ARSE,Aryl Sulfatase,CCNG1,CHST2,CLEC7A,CYBRD1,DMXL2,ELOVL6,ethanol,GREM2,HAMP,HFE2,HIST1H3A,hydrocortisone,IL2,IL13,IL13RA2,iron,MAOA,NCAPH,norepinephrine,NPY1R,PHLDA1,PHLDA2,progesterone,SERPINA6,SESN3,SLC40A1,SLC7A2,SUMF1,TC2N,TP53INP1	1E-20
15	ALDH2,ALDH5A1,ARPC2,BDKRB2,C9ORF3,CCDC28A,CCNG2,CLMN,CSRP1,EPHA2,ERCC5,FDXR,FMN1,FNBP1,HSD17B6,IER3,JAG2,KCNJ4,KIAA1199,LIMK2,LRBA,MIA2,PBLD,PIGF,PLK2,PPP1R13B,RHOC,RHOD,SHISA5,SHMT1,SLC23A2,SNRPD3,STRAP,TGFB1,TP73	1E-20
16	Alpha actin,AMPK,APAF1,ARID4A,BCL2L11,BNIP3L,Calcineurin protein(s),Caspase,Cdc2,CDC25C,Cyclin A,Cyclin B,Cyclin E,Cytochrome c,DHCR24,DHFR,E2f,EFHC1,FBXO32,GIP,Hdac,HIST1H2AB,HIST1H2AG,Hsp27,Hsp70,Hsp90,IQGAP2,MEF2,Mek,P38 MAPK,PFKFB3,Rb,RPS6KA5,TFDP2,WEE1	1E-20
17	ACTR5,ACTR8,ANK3,ARID5B,ATF7IP,BAZ1A,ERVK6,FCHSD2,GATS,HOOK1,INO80,INO80B,INO80D,INO80E,KIAA1370,KIAA1377,KIAA1632,KIF20B,MARC H4,MGAM,MIR292 (includes EG:100049711),MIR30E (includes EG:407034),MTMR11,PEX6,PLCH1,RHOBTB1,RRBP1,RUVBL1,SCAPER,SMAD2,SMAD9,SUMO1,SVEP1,ZBTB20,ZMYND11	1E-18

Network Number	Molecules in Network	p-value
18	Akt,Angiotensin II receptor type 1,AREG,BDKRB1,BDKRB2,CCL2,CDCP1,CHEMOKINE,CLDN1,EGFR ligand,ERBB,ERBB4 ligand,EREG,GAB1,Gpcr,HBEGF,IFN alpha/beta,Ifn gamma,Ifnar,Ikb,IKK (complex),IL11,IL12 (family),INADL,NfkB1-RelA,NRG4,P2RY4,p70S6k,Pik3r,Sfk,Shc,TJP2,TLR1,TLR3,Tnf	1E-18
19	BBS9,BTN3A1,C1R,CABP7,CORO2A,CYB561,EFCAB6,EGR2,ERAP1,GCA,GIP2,HERC6,Hla-abc,IFI30,IFI35,IFI44,IFI47,IFNA2,IFNG,KDM5B,LARGE,MR1,MT1X,NFE2L3,OAS3 (includes EG:4940),PARP9,RNF213,SAMD9,SP110,STAMBPL1,TBC1D10A,TMEM50B,TRIM22,ZFP36,ZKSCAN1	1E-17
20	ABCG2,ARG1,BBS1,BCL6,beta-estradiol,BLNK,CEP152,CYB5A,CYP17A1,CYP2C9,DUSP6,EIF3A,ELF1,EPB41L2,EPB41L3,FLOT1,FMO5,GSR,HBEGF,HLA-DR,HLA-DRB1,ITGBL1,KIAA0922,MED23,MEIS2,Mhc ii (family),MIR200A (includes EG:406983),PBX1,PCDH9,RFX5,SAP30,SHBG,SSBP2,TM4SF20,TMEM37	1E-15
21	ARHGAP1,BCR,C5,C1q,COTL1,EFNA1,ELMO1,EPHA2,ERK,F Actin,G protein alpha,G protein alphai,G-Actin,G-protein beta,G-protein gamma,Igm,LIMA1,LRP1,p85 (pik3r),Pdgf,Pi3-kinase,PLC,PLC gamma,PLCD4,Pld,PLD1,Rac,Rap1,Ras,Ras homolog,RND1,Sapk,SORL1,SYNE2,VIL1	1E-14
22	ADCY10,COPS8,CST1,CTPS,DDAH2,E2F1,FNIP1,GUCY1A2,GUCY1B2,GUCY1B3,GUCY2C,GUCY2D,GUCY2E,GUCY2F,HIST1H2AC,HIST1H4H (includes EG:8365),HMGCL,HSP90AA1,KRT38,LIMA1,MLEC,MLXIP,NAGA,NFKBIL1,PECR,PNN,PRPF19,SFRS18,SLC25A3,SLC2A4,SOD2,Soluble guanylate cyclase,SRRM2,TXNL1,YWHAG	1E-13
23	ASF1B,BMP1,BTBD11,COL6A1,collagen,CX3CL1,dihydrotestosterone,ETV1,FGF3,GRAMD1A,HIST1H3E,HIST1H3J,Histone h4,HOXA9,KITLG,KLK2,MME,MMP2,MSI2,NEB,NNT,PARK7,PDGFRL,poly(ADP-ribose),RBM39,RDX,RPS6KB1,SFRP1,SFRS11,SLC16A7,SLC44A2,TERT,UBASH3B,UGC,G,WSB1	1E-13
24	adenylate kinase,AK1,AK5,AK7,AK3L1,APP,ARL15,C10RF63,C1RL,CNNM2,CRCT1 (includes EG:54544),Cytoplasmic Dynein,DYNC1LI1,DYNC2H1,FAM38B,HP,KLK6,MIR98 (includes EG:407054),MIRLET7B (includes EG:406884),NAV3,prostaglandin E2,PROZ,PRSS1 (includes EG:5644),PRSS2 (includes EG:25052),PRSS3 (includes EG:5646),PTN,PTPLAD2,REG1A,SERPINE2,SLC31A1,TCOF1,Trypsin,YPEL5,ZNF654	1E-13
25	AHSG,ALB,AMBP,APOC3,ATG2B,CDC45L,CDKN1B,CLCA2 (includes EG:9635),COPS3,CYHR1,HAO1,HNF1A,HPX,LGALS3,MIR26A1,MIR291B,MLF1,NFIA,NFIB,NFIC,NFIX,NR1D1,NR1D2,OSBPL9,PLEK2,PRSS1 (includes EG:5644),PRSS3 (includes EG:5646),SERPING1,SLC25A27,TBC1D8B,Tcf 1/3/4,TCF7L2 (includes EG:6934),TMOD2,ZNF292,ZNF608	1E-12

Supplemental Material, Table 4: Disease categories identified by DAVID analysis as enriched in cells exposed to (A) primary pollutants, and (B) PCA pollutants.

DAVID's functional annotation tool was used to identify associated diseases (Dennis 2003, Huang 2009a, Huang 2009b). P-values are calculated using a modified Fisher's Exact test (as described in Hosack 2003). Overlapping disease categories identified through the Ingenuity Systems® analysis are also detailed.

DAVID's Enriched Disease Category	p-value	Genes	Ingenuity System's Related Enriched Disease Category
(A) Primary Pollutant Exposure			
diabetes, type 1	0.008	<i>CCL2, CYP2D6, NFKBIA, OAS1</i>	
multiple sclerosis	0.050	<i>CCL2, CYP2D6, OAS1</i>	
H. pylori infection	0.067	<i>CCL2, CYP2D6</i>	
colorectal cancer	0.074	<i>CCL2, CYP2D6, NFKBIA</i>	Cancer
liver cancer	0.100	<i>CYP2D6, NFKBIA</i>	Cancer
(B) PCA Pollutant Exposure			
myocardial infarct; thromboembolism, venous; thrombosis, deep vein	0.006	<i>FGG, FGA, FGB</i>	Cardiovascular Disease
fibrinogen	0.006	<i>FGG, FGA, FGB</i>	
angina	0.012	<i>FGA, FGB, ITGA3, CPB2</i>	Cardiovascular Disease
thrombosis, deep vein	0.017	<i>FGG, THBD, FGA, FGB, CPB2</i>	
fibrinogen myocardial infarct	0.020	<i>FGG, FGA, FGB</i>	Cardiovascular Disease
fibrinogen heart disease, ischemic tissue plasminogen activator level	0.020	<i>FGG, FGA, FGB</i>	Cardiovascular Disease
iron levels	0.029	<i>CYBRD1, HFE, SLC40A1</i>	
fetal loss, late	0.035	<i>THBD, FGB, HFE, ITGA3</i>	Embryonic Development
thromboembolism, venous	0.040	<i>LRP1, THBD, FGA, FGB, CPB2, HABP2</i>	
myocardial infarction	0.054	<i>FGG, THBD, FGA, FGB, HFE, BDKRB2, CPB2</i>	Cardiovascular Disease
atherosclerosis, coronary	0.054	<i>CCL2, ADH1C, EPHX2, ITGA3, BDKRB1, BDKRB2, ABCA1, LRP1, ECE1, THBD, FGB, CFH, SCARB1</i>	
colorectal cancer	0.081	<i>ODC1, SHMT1, CCL2, GSTA4, IL8, CXCL5, TP53, ADH1C, NFKBIA, HFE, CDH1, DHFR, DPYD, GDF15, PLAU</i>	Cancer
migraine	0.091	<i>EFHC1, AR, MAOA, GABRA5, SLC25A27</i>	
atherosclerosis, coronary atherosclerosis, generalized	0.091	<i>FGG, FGA</i>	
post-trauma fibrinogen increase	0.091	<i>FGA, FGB</i>	
haemochromatosis	0.091	<i>HFE, SLC40A1</i>	
Aalpha and gamma fibrinogen plasma levels	0.091	<i>FGG, FGA</i>	

Supplemental Material, Table 5: Transcription factors predicted to regulate genes modified upon exposure to (A) both primary and PCA pollutants, (B) primary pollutants, and (C) PCA pollutant mixtures.

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
(A) Overlapping Transcription Factors (Primary and PCA Pollutants)				
HNF-1	M00132	See tables (B) and (C) below	Decreased	0.003 (average)
NF-Y	M00287	See tables (B) and (C) below	Decreased	0.005 (average)
Oct-1	M00137	See tables (B) and (C) below	Decreased	0.014 (average)
GATA-1	M00127	See tables (B) and (C) below	Decreased	0.017 (average)
FOXO4	M00472	See tables (B) and (C) below	Decreased	0.022 (average)
Evi-1	M00078	See tables (B) and (C) below	Decreased	0.039 (average)
(B) Primary Pollutant Mixture				
PPARalpha	M00242	<i>ACSM3, ACTA2, TXNIP</i>	Decreased	0.001
PAX	M00808	<i>CYP2D6, OAS1, PAQR5, SLC5A3</i>	Increased	0.002
HNF-1	M00132	<i>ACSM3, TXNIP</i>	Decreased	0.006
UF1H3BETA	M01068	<i>CYP2D6, GFPT2, NFKBIA, PAQR5, SLC5A3</i>	Increased	0.006
TBX5	M01020	<i>NFKBIA, PAQR5, SLC5A3</i>	Increased	0.006
SRF	M00186	<i>ACTA2</i>	Decreased	0.007
NF-Y	M00287	<i>ACSM3, TXNIP</i>	Decreased	0.009
GATA-1	M00127	<i>ACSM3, ACTA2</i>	Decreased	0.015
MZF1	M00083	<i>CYP2D6, SLC5A3</i>	Increased	0.017
Oct-1	M00137	<i>ACSM3, TXNIP</i>	Decreased	0.027
Hmx3	M00433	<i>ACTA2, TXNIP</i>	Decreased	0.029
RREB-1	M00257	<i>CYP2D6, GFPT2, NFKBIA, OAS1</i>	Increased	0.029
Evi-1	M00078	<i>TXNIP</i>	Decreased	0.035
HNF-4	M00134	<i>CYP2D6, OAS1, SLC5A3</i>	Increased	0.036
COUPTF	M01036	<i>CYP2D6, GFPT2, SLC5A3</i>	Increased	0.041
FOXO4	M00472	<i>ACTA2, TXNIP</i>	Decreased	0.043
Freac-3	M00291	<i>TXNIP</i>	Decreased	0.045
(C) PCA Pollutant Mixture				
FOXO4	M00472	<i>A1CF, ACTA2, ALPK1, APAF1, APH1B, ARSE, ASPM, BCL2L11, BCMO1, BDH2, BNIP3L, C4orf18, CCDC28A, CCDC34, CCDC80, CCPG1, CDC25C, CDCA7L, CENPF, CFHR3, CFI, CIR1, CORO2A, CRBN, CTDSP2, CTNNND1, CTTNBP2, DEPDC4, DIAPH2, EFNA1, EIF2C4, ELOVL6,</i>	Decreased	9.45E-09

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
		<i>EPHX2, FBXO32, FGB, FRK, GATM, HSD17B11, ID1, IFT81, IQGAP2, KIAA1370, KIF20A, MANSC1, MARCKS, MCCC1, MGAM, MUT, NAP1L2, NCOA2, NDRG1, NR0B1, NRG4, OSBP1, PAIP2B, PBLD, PCMTD1, PDCD4, PDE3A, PDZK1, POF1B, RBKS, RND1, RPS6KA5, SESN3, SKAP2, SLC2A12, SLC35D2, SPTLC3, ST8SIA4, SYCP2L, TFDP2, TGFBI2, TLR3, TMEM140, TMEM37, TNFSF10, TXNDC16, TXNIP, VCAN, VRK2, WEE1, WWP1, ZBTB20, ZNF608, ZNF654</i>		
HNF-1	M00132	<i>A1CF, ABCA12, ABCG2, ACSM3, ADH6, ALPK1, ANG, ANKRA2, ANKS4B, ANXA13, APOH, ARSE, C4orf18, C5, C7orf68, CASP4, CEACAM1, CEP152, CFHR3, CFI, CPB2, CYB5A, DAB2, ELM01, FAM38B, FGA, FGB, FGG, FRK, GLTSCR2, HABP2, HA01, HIST2H2BA, HNF4A, HOOK3, IP6K2, MANSC1, MARCKS, MGAM, MIA2, MTMR11, NAP1L2, NEB, NIPAL3, NIPSNAP3A, NNT, NR5A2, NRM, OPHN1, PLCH1, RPS6KA5, SAMD9, SEMA3E, SERPINA6, SLC25A27, SLC41A2, SLC7A2, SPATA7, STEAP2, TBC1D5, THG1L, TLR1, TLR3, TM4SF20, TMEM136, TMEM144, TMEM37, TXNIP, VPS13C, VRK2, WSB1, YPEL2, ZNF654, ZNF704</i>	Decreased	6.23E-06
TEF	M00672	<i>ABCA12, ADHFE1, AKAP9, AR, ARID5B, ASPM, BCAS3, BTBD11, BTN3A1, C1RL, C1S, C4orf34, C5, C5orf42, CCDC28A, CCNG2, CCPG1, CENPF, CFH, CFHR1, CFHR3, CRBN, DAB2, DMXL2, DNAJB4, DZIP3, ELOVL6, FAM149A, FAM38B, FGB, FLOT1, GRIP1, GSTM4, HIST2H2AA3, HIST2H4A, HSD17B6, ING4, KIAA0922, KIAA1377, KIF13B, MANSC1, MIA2, NAP1L2, NEB, NFKBIZ, NIPAL3, NIPSNAP3A, NR0B1, NRG4, NRM, P2RX4, PBLD, PLCD4, RFX5, SEMA3E, SESN3, SFRS18, SLC16A7, SPTLC3, SYCP2L, TBC1D8B, TIGD2, TLR1, TLR3, TRIM31, TSKU, TTC28, UGT2B15, UNC119B, VPS13C, ZC3H6, ZNF292, ZNF594, ZNF654, ZSCAN16</i>	Decreased	1.18E-05
NF-Y	M00287	<i>ABCA5, ABCB6, ACSM3, ADHFE1, ALDH6A1, ARFGAP2, ARHGAP1, ARID4A, ARID4B, ASPM, ATF6B, BAMBI, BLMH, BTBD11, BTN3A1, C4orf18, C6orf130, CABYR, CCBL2, CCDC28A, CCDC34, CCNG1, CCNG2, CDC14B, CDH1, CDK5RAP3, CENPF, CEP152, CFI, CIRBP, CNNM2, CPB2, CTDSP2, CYFIP2, CYP4F12, DAPK1, DCDC2, DHCR24, ECE1, EHHADH, ELP4, FAM105A, FAM55C, FAR2P, FNIP1, GCA, GK, HBP1, HFE, HIST1H2AB, HIST1H2AC, HIST2H2AA3, HIST2H2BA, HMGB2, HOOK1, HP1BP3, ID1, ITPR2, KCNT2, KDM3A, KIAA1377, KIF20A, KIF20B, KLHL24, LARGE, LETMD1, LRBA, LRIG1, MAOA, MARCKS, MBOAT1, MLEC, NCALD, NCAPD2, NDRG2, NEB, NEDD4L, NRIP1, NUSAP1, PAIP2B, PAN2, PCDH9, PDCD4, PDK2, PDZK1, PER2, PGAP2, PIGN, PLEKHH2, RFX5, RND1, RPS6KA5, SAMD9, SCD, SERPINA6, SESN3, SHMT1, SKAP2, SLC25A27, SLC46A3, SLC9A3R1, ST8SIA4, TFDP2, TMEM50B, TP53, TPCN1, TSPAN15, TXNDC16, TXNIP, WEE1, XBP1,</i>	Decreased	2.31E-05

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
		YPEL2, YPEL5, ZBTB20, ZNF287, ZNF594, ZSCAN16		
LEF1	M00805	A1CF, ABCA1, ABCA12, ABCA5, ACAD10, ACAD11, ACSS2, ACTA2, ADD3, ADH1C, ALDH5A1, ANG, ANXA9, APOBEC3C, APOH, AR, ARHGAP1, ARMCX3, ARSD, ARSE, BCAS3, BCL2L11, BDH2, BDKRB1, BDKRB2, BLMH, BTN3A1, BTN3A3, C14orf106, C20orf74, C5, C6orf130, C9orf3, CABYR, CCDC28A, CCDC34, CCDC80, CCNG1, CCPG1, CD99L2, CDC25C, CDK5RAP3, CEACAM1, CFHR1, CFHR3, CIR1, CNNM2, CPB2, CPN1, CTNND1, CTTNBP2, CYBRD1, CYP4F11, DAB2, DEPDC4, DET1, DHRS3, DIAPH2, DMXL2, DNAJB4, EFHC1, EFNA1, ELF3, ELMO1, ELOVL6, ELP4, EPHX2, ERAP1, ERBB2, FAM111A, FAM149A, FAM55C, FGA, FGB, FKBP5, FNIP1, FRK, FZD7, GABARAPL1, GATSL1, GCA, GK, GLTSCR2, HABP2, HA01, HIST1H2AB, HIST1H2AG, HIST2H2AA3, HOXA2, HSD17B11, ID1, KCNT2, KDM3A, KIAA0922, KIAA1377, KIF13B, KIF20A, KLHDC2, KLHL24, LETMD1, LRBA, LRIG1, LRP1, LXN, LYRM5, MANBA, MANSC1, MARCKS, MATN2, MCCC1, MIA2, MLEC, MR1, MRAP2, MSI2, MTMR11, NAP1L2, NCALD, NEB, NEDD4L, NFIA, NIPAL3, NIPSNAP3A, NOTCH2, NOTCH2NL, NPY1R, NR1D2, NR5A2, NRIP1, NUDT7, NUSAP1, PAIP2B, PAN2, PARP14, PARP9, PBLD, PDCD4, PDE3A, PDGFC, PDGFRL, PDK2, PFKFB3, PLCD4, PLCH1, POF1B, PRKCD, RAP1GAP, RARB, RBKS, RHOBTB1, RNF213, SAMD9, SCAPER, SELENBP1, SERPINB1, SESN3, SFRS18, SH3BGRL2, SLC16A7, SLC19A3, SLC23A2, SLC25A27, SLC29A3, SLC2A12, SLC40A1, SLC41A2, SLC44A2, SPATA7, ST8SIA4, STEAP2, STX17, SVEP1, SYCP2L, SYNE2, TBC1D8B, TBCK, TC2N, TFDP2, TGFB2, TLR3, TM4SF20, TMEM136, TMEM37, TNFSF10, TRIM31, TTC39B, TTLL6, USP3, VCAN, VPS13C, VRK2, WEE1, WSB1, YPEL5, ZFP14, ZKSCAN1, ZNF224, ZNF287, ZNF594, ZNF608, ZNF654, ZNF704, ZSCAN16	Decreased	4.37E-04
PLZF	M01075	A1CF, ACAD11, ACSM3, ADHFE1, ANO5, APH1B, AR, ASPM, BCAS3, BCL2L15, C1S, C4orf18, C4orf34, C5orf42, CCDC34, CDK5RAP3, CENPF, CFH, CFI, CLMN, CPB2, CRBN, CYB5A, DAB2, DAPK1, ELP4, FAM149B1, GABARAPL1, GCA, GSTA4, HA01, HIST2H4A, HMGB2, HOOK3, IFIT1, KDM3A, KIAA0922, KIAA1370, KIAA1632, KIF13B, KLHDC2, KLHL24, LYRM5, MCCC1, MGAM, MIA2, NBEAL1, NCALD, NEB, NFIA, NFKBIZ, NIPSNAP3A, NUDT7, NUSAP1, PAIP2B, PBLD, PCMTD1, RHOBTB3, SEMA3E, SESN3, SH3BGRL2, SLC16A7, SLC41A2, SSBP2, TBC1D5, TIGD2, TM4SF20, TMEM136, ZNF292, ZNF608, ZNF654	Decreased	4.58E-04
Oct-1	M00161	ABCB6, ACSM3, ADH6, ADHFE1, ANXA13, ARFGAP2, ASPM, C4orf18, CASP4, CCDC34, CEACAM1, CEP70, CFHR1, CORO2A, CRBN, DAB2, DNAJB4, ELF3, ENTPD5, FAM105A, FGFR4, FOXN3, GABARAPL1, GATM, HABP2, HIST1H2AC, HIST2H2AA3, HIST2H2BA, KCNT2,	Decreased	6.30E-04

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
		<i>KIAA1109, LHX8, LYRM5, MARCKS, MBOAT1, MGAM, MTMR11, NBEAL1, NEB, OSBPL9, PARP9, PDZK1, PLCD4, POF1B, RHOBTB1, RHOBTB3, SCD, SCNN1A, SEMA3E, SLC19A3, STAT4, TBC1D5, TBC1D8B, TLR1, TSPAN15, WSB1, WWP1, YPEL5, ZNF292</i>		
HOXA4	M00640	<i>ANKRD1, CALB1, CCBE1, CLDN1, CXCL5, EREG, FBXO40, ITGA3, ITGBL1, LM07, SERPINB8</i>	Increased	8.03E-04
HNF-1	M00206	<i>A1CF, ABCA12, ADH6, ALPK1, ANG, ANKS4B, ANXA13, BAMBI, BDKRB1, C4orf18, C5orf42, CALCOCO1, CCNG2, CTNND1, DAB2, DIAPH2, DYNC2H1, FGA, FRK, HIST2H4A, HP1BP3, HSD17B11, ING4, IQGAP2, LXN, LYRM5, MIA2, NAP1L2, NEB, NIPAL3, NNT, NRM, PCCA, PLCH1, RARB, SAMD9, SLC19A3, SLC23A1, SLC2A12, SLC35D2, SPATA18, SPTLC3, STRA6, THG1L, TLR3, TM4SF20, TMEM37, UGT2B15, VPS13C, YPEL2, ZNF654</i>	Decreased	0.001
CDX	M00991	<i>A1CF, ABCA5, ACAD11, ACSM3, ALDH6A1, ANG, ARID4B, ARID5B, ARMCX3, ASPM, BBS9, BCMO1, BDH2, BTN3A3, C5orf42, CCDC28A, CENPF, CFH, CFHR1, CFHR3, CRBN, DEPDC6, DIAPH2, DNAJB4, DPYD, DYNC2H1, ENTPD5, FAM149B1, FAM175A, FGB, HBP1, HFE, HIST1H2AC, HIST2H4A, HNF4G, HOOK3, HOXA2, KCNK5, LYRM5, MARCKS, MCCC1, MIA2, NAP1L2, NBEAL1, NCALD, NRG4, PCMTD1, POF1B, SESN3, SHMT1, SKAP2, SLC16A7, SLC19A3, SLC41A2, SPATA18, SPP1, ST8SIA4, TBC1D5, TLR1, TLR3, TMEM136, TXNIP, UGT2B15, WWP1, XBP1, ZBTB20, ZC3H6, ZNF224, ZNF287, ZNF292, ZNF608, ZNF654, ZSCAN16</i>	Decreased	0.001
SRY	M00148	<i>A1CF, ABCA1, ABCG2, ADH1C, ANG, ANKRA2, ANXA13, APH1B, APOH, ARFGAP2, ARID5B, ARSD, ARSE, AS3MT, ASPM, BAMBI, BBS9, BCMO1, BDH2, BLMH, BMPR2, BNIP3L, BTN3A1, BTN3A3, C1orf63, C1S, C5, C7orf68, CCDC28A, CCNG2, CDC14B, CDC25C, CDCA7L, CEP152, CFHR3, CIR1, CORO2A, CRBN, CTTNBP2, DNAJB4, EFHC1, EFNA1, EIF4B, ELMO1, ELOVL6, EPHX2, ERAP1, FAM111A, FAM149B1, FAM38B, FBXO32, FGB, FGG, FOXN3, FRK, FZD7, GABARAPL1, GATM, GATSL1, GK, HABP2, HBP1, HFE, HIST1H2AC, HIST2H4A, HP1BP3, IFIT1, IFT81, INADL, ING4, IP6K2, IQGAP2, KIAA1632, LITAF, LYRM5, MARCKS, MCCC1, MGAM, MR1, NAP1L2, NCALD, NDRG1, NFIA, NPY1R, NRG4, NUDT7, PAIP2B, PBLD, PCMTD1, PDCD4, PPFIBP2, PTPLAD2, RFX5, RND1, RNF213, SAMD9, SASH1, SERPINA6, SFRP4, SFRS18, SH3BGRL2, SKAP2, SLC16A7, SLC2A12, SLC35D2, SLC7A2, SMPD1, SPATA18, SPATA7, SPP1, SPTLC3, STAT6, STX17, SYCP2L, SYNE2, TBC1D8B, TFDP2, THG1L, TLR1, TLR3, TM4SF20, TMEM136, TMEM144, TMEM37, TMEM50B, TPCN1, TRIM31, TST, TXNIP, UNC13B, VPS13C, VRK2, ZBTB20, ZNF287, ZNF704</i>	Decreased	0.002
Bach2	M00490	<i>CCDC99, CEACAM5, COTL1, CST1, DCLK1, FHL1, FLI1, IL11, IL8, KRT80, LAMC2, NID2, NR4A1, OR4C6, PSG8,</i>	Increased	0.003

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
		<i>RAB3B, RNF182, SEMA3C, SERPINB8, SNRPN, TFPI2, TMEM171</i>		
S8	M00099	<i>A1CF, ACAD10, ADH1C, ANKS4B, ASPM, BAMBI, C1S, C5, C5orf42, CACNA1D, CALCOCO1, CDCA7L, CENPF, CYFIP2, DAB2, DCDC2, DIAPH2, DMXL2, DNAJB4, ELMO1, ELP4, FAM55C, FNIP1, HA01, HERC6, HFE, HIST1H2AC, IFIT1, KCNT2, KIF13B, LYRM5, MARCKS, MGAM, NAP1L2, NBEAL1, NCALD, NCAPD2, NIPSNAP3A, NRG4, PDZK1, PECR, PIR, PLCH1, RHOBTB3, SAMD9, SASH1, SEMA3E, SH3BGRL2, SLC16A7, TIGD2, TLR1, TMEM60, TTL6, YPEL2, ZC3H6, ZFYVE1, ZNF704</i>	Decreased	0.003
C/EBPgamma	M00622	<i>ADH1C, ADH6, ALPK1, ANXA13, APOH, ARSD, BCM01, C9orf3, CABYR, CACNA1D, CALCOCO1, CASP4, CCDC28A, CDC14B, CEP70, CFHR1, CRBN, CYBRD1, DAB2, DCDC2, DMXL2, DZIP3, FAM111A, FGB, IQGAP2, KIAA0922, KIAA1377, KIF13B, LHX8, MCCC1, MEIS2, NEK11, NRG4, PAN2, PBLD, PCMTD2, PDCD4, PECR, PLCH1, PLEKHH2, PTGR2, RPS6KA5, SEMA3E, SLC2A12, SLC41A2, SPG11, SPP1, STAT4, SYCP2L, TMEM140, UGT2B15, VPS13C, ZNF292</i>	Decreased	0.003
Nkx6-2	M00489	<i>ADH1C, ADH6, ANG, ANKS4B, ASPM, BBS9, C5, C5orf42, CALCOCO1, CCDC34, CEACAM1, CEP152, CYB5A, DMXL2, ELMO1, ENTPD5, EPHX2, FAM38B, FAM55C, FGB, FGG, FLOT1, FNIP1, FRK, HFE, HIST2H4A, HNF4G, KIAA1109, KIAA1370, KIAA1712, LHX8, LYRM5, MANSC1, MARCKS, MCCC1, MIA2, NAP1L2, NFIA, NIPAL3, NIPSNAP3A, NNT, NR0B1, PAN2, PDCD4, PLCH1, RPS6KA5, SCAPER, SESN3, SH3BGRL2, SHMT1, SORL1, TBC1D5, TMEM136, TNFSF10, TXNIP, UGT2B15, ZC3H6, ZKSCAN1, ZNF292</i>	Decreased	0.005
FOXJ2	M00423	<i>A1CF, ABCG2, ADH1C, ANXA13, ARID5B, ARMCX3, ASPM, BLMH, BTN3A3, C4orf18, C4orf34, C5orf42, CCDC28A, CCDC80, CFHR3, CFI, CPB2, DPYD, DTX3L, DYNC2H1, DZIP3, FGB, FGG, FNIP1, HSD17B11, KIAA1370, KIF20A, MANSC1, MARCKS, MGAM, MUT, NAP1L2, NBEAL1, NFIA, NFKBIZ, NIPSNAP3A, NRG4, NUDT7, PBLD, PCCA, POF1B, SHMT1, SKAP2, SLC16A7, SORL1, SPP1, SYCP2L, TBC1D5, TM4SF20, YPEL5, ZMYM3, ZNF292, ZNF654</i>	Decreased	0.005
C/EBPalpha	M00116	<i>ADH1C, ADHFE1, ALPK1, ARMCX3, C9orf3, CCNG2, CFH, CFHR1, CPB2, DEPDC4, DHRS3, DMXL2, ELP4, ENTPD5, FAM38B, FGA, GCA, HIST1H2AB, HNF4G, INADL, ING4, KIAA0922, LHX8, LRBA, LXN, MANBA, MANSC1, MR1, MUT, NBEAL1, NDRG2, NEK11, PBLD, PCMTD2, PFKFB3, SLC7A2, ST8SIA4, STEAP2, TIGD2, TLR3, TSKU, ZC3H6, ZNF292, ZNF608, ZNF654, ZSCAN16</i>	Decreased	0.006
STAT5A	M00499	<i>ANKRD1, ANXA10, C6orf191, CCL2, CLDN1, CPA4, FSTL5, GABRA5, GPRC5A, HBEGF, ITGA3, ITGBL1, KRT38, OR4C6, OR51B4, OXTR, SAMD7, SERPINE2, SLC5A3, SPRR2B, TFPI2, WDR69</i>	Increased	0.007
NF-AT	M00302	<i>ABCA1, ACSS2, ADHFE1, ALS2CR8, BTN3A1, C20orf74, C5orf42, CCBL2, CCDC80, CEP152, CFHR3, CYB5A,</i>	Decreased	0.009

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
		<i>DIAPH2, EIF2C4, ELOVL6, ELP4, FAM105A, FAM55C, FGFR4, HOXA2, HP1BP3, LIMA1, LRBA, MARCKS, NFKBIZ, NR5A2, PAIP2B, PER2, SFRP4, SLC25A27, SLC29A3, STAT4, STX17, SYNE2, TBC1D5, TGFB2, TLR1, TM4SF20, TMEM144, TNFSF10, TP53INP1, TTC39B, UGT2B15, ZNF287, ZNF654</i>		
NF-AT	M00935	<i>ABCA5, ARID4B, ARRB1, C4orf18, CEP152, CEP70, CYP4F3, DMXL2, FBXO32, HFE, HIST2H2BA, KIAA1377, LRBA, MARCKS, NIPSNAP3A, NNT, NUSAP1, OPHN1, PBLD, PDGFRL, RARB, SEMA3E, SLC16A7, SYNE2, TBC1D5, TCP11L2, TMEM144, TP53, TTC39B, YPEL2, ZNF654</i>	Decreased	0.009
Freac-4	M00292	<i>AMPD1, ANKRD1, ANXA10, CCL2, CD55, DHRS9, DUSP4, EMP1, GDF15, HAS2, LM07, NAV3, NMNAT2, OXTR, PHLDA1, RNF182, SNRPN, SPRR2B</i>	Increased	0.010
TFIIA	M00707	<i>AKAP12, ASAM, AXL, CLDN1, CXCL5, DGCR6, DHX37, ITGA3, KIAA1199, ODC1, PMEPA1, STAMBPL1, TGFA, XCL1</i>	Increased	0.011
PLZF	M01075	<i>AKAP12, ANKRD22, ANXA10, CCBE1, CPA4, DHX37, DUSP1, EMP1, FBXO40, FSHB, GPRC5A, HTR3D, IL11, IL8, ITGBL1, KRT38, OR4C6, OR51B4, OXTR, POU1F1, SAMD7, SOCS2</i>	Increased	0.013
HFH-1	M00129	<i>A1CF, ACTA2, ADHFE1, APH1B, APOH, ARID4B, ARID5B, BDH2, BDKRB2, C14orf106, C4orf18, CASP4, CCDC28A, CLMN, CRBN, DAB2, DEPDC6, DMXL2, DNAB4, DYNC2H1, ENTPD5, ERAP1, FAM105A, FAM175A, FGB, FGG, FNIP1, HAO1, HIST1H2AC, HIST2H2AA3, HSD17B11, IFT81, ITPR2, LITAF, LXN, MGAM, MSI2, NAP1L2, NCOA2, NIPSNAP3A, NR5A2, NRG4, NUDT7, PARP9, PBLD, PCMTD1, RHOBTB1, RHOBTB3, SASH1, SEMA3E, SKAP2, SLC16A7, SLC19A3, SLC2A12, SLC7A2, SORL1, SPTLC3, SYCP2L, SYNE2, TBC1D8B, TM4SF20, TMEM136, TMEM140, UNC119B, VRK2, WWP1, ZMYM3, ZNF654</i>	Decreased	0.013
TBP	M00471	<i>AMPD1, ANKRD22, ANXA10, CALB1, CCBE1, CPA4, DHRS9, DPT, FBXO40, FLI1, ITGBL1, NR4A1, OR4C6, OR51B4, POU1F1, SPRR2B, SSFA2, STAMBPL1, TFPI2</i>	Increased	0.014
ZID	M00085	<i>AP1S3, CDCP1, CEACAM5, CPZ, CTPS, DND1, FSTL5, GFPT2, ITGB8, ITGBL1, LRRFIP1, LYAR, MICAL2, NMNAT2, PTRF, RAB3B, SLC04A1, SOCS2, TMEM171, TMEM74, XDH</i>	Increased	0.014
HMGIY	M01010	<i>ABCG2, ACTA2, ANKS4B, ANXA4, ARFGAP2, BCL2L11, BDKRB1, BTN3A1, CCBL2, CCNG1, CFH, CPB2, DHRS3, DYNC2H1, ELOVL6, ELP4, FGB, HIST2H2BA, IQGAP2, KCNT2, KDM3A, KIAA0922, KIAA1377, KIF20A, LHX8, LYRM5, MCCC1, NFIA, NPY1R, NR5A2, NUDT7, PAIP2B, PLCH1, SAMD9, SFRS18, SLC35D2, SLC41A2, SYCP2L, TBC1D8B, TIGD2, TLR3, TM4SF20, TPCN1, WEE1, XBP1, ZNF608</i>	Decreased	0.014
TATA	M00252	<i>AMPD1, DPT, FGFBP1, GDF15, GLIPR1, IL8, JUN,</i>	Increased	0.015

Transcription Factor	TRANSFAC Accession Number	Predicted Gene Targets (Targets are Genes Identified as Differentially Expressed)	Targets' Expression Direction	p-value
		<i>KIAA1199, NR4A1, SERPINB8, SNRPN, STAMBPL1, STC1</i>		
SOX	M01014	<i>C6orf191, CALB1, CCBE1, DUSP4, FGFBP1, FLI1, FRMD3, ITGB8, ITGBL1, NAV3, NMNAT2, NRG1, OAS1, SOCS2, TNFRSF12A</i>	Increased	0.015
NF-E2	M00037	<i>ANKRD22, AQP3, CCDC99, COTL1, CPZ, DGCR6, FGFBP1, GLIPR1, HAS2, HTR3D, IL11, KIAA1199, KRT80, NAV3, OR51B4, RAB3B, SERPINB8, TNS4</i>	Increased	0.017
DEC	M00997	<i>AKAP12, ASAM, C10orf114, CD55, CEACAM5, CSRP1, DND1, FHL1, IER3, ITGA6, MYEOV, SERPINE2, SLC04A1, SSFA2, THBD, TNS4</i>	Increased	0.018
GATA-1	M00346	<i>CXCL5, FGFBP1, FSTL5, GPRC5A, GREM2, HAS2, HSPH1, LAMC2, POU1F1, SERPINE2, TGFA, WDR69</i>	Increased	0.018
FAC1	M00456	<i>A1CF, ACSM3, ALS2CR8, APOH, ARID5B, BCMO1, C14orf106, C1orf63, C20orf19, CALCOCO1, CCDC34, CCNG2, CDCA7L, CFHR1, CLMN, CRBN, CYB5A, DAB2, DIAPH2, EFNA1, EML4, ENTPD5, ERAP1, FAM111A, FAM38B, GABARAPL1, GATSL1, GLTSCR2, HBP1, HFE, HIST1H2AG, HNF4G, IFIT1, LITAF, MUT, NCAPD2, NEDD4L, NR5A2, NRG4, NRIP1, PDCD4, PECR, POF1B, SFRP4, SFRS18, SH3BGRL2, SKAP2, SLC23A2, SLC7A2, SPP1, SPTLC3, STEAP2, STX17, SYCP2L, SYNE2, TBC1D5, TBC1D8B, TGFB2, TLR1, TMC7, TMEM144, TMEM50B, VCAN, VPS13C, YPEL5, ZFYVE1, ZNF287, ZNF608</i>	Decreased	0.018
SREBP-1	M00221	<i>AMPD1, AQP3, CEACAM5, EREG, FGFBP1, GABRA5, GPRC5A, IL8, ITGBL1, JUN, LRRKIP1, PMEPA1, PSG8, SLC04A1, TFP12, THBD, TMEM171, XCL1</i>	Increased	0.021
HNF4	M01032	<i>ABCA1, ACSM3, AHCYL1, AKAP9, ALS2CR8, ANKRA2, ANKS4B, ANXA4, ANXA9, APOBEC3C, APOH, ARID4B, ARID5B, BCAS3, BCL2L15, BDKRB1, BDKRB2, C1RL, C4orf18, C4orf34, C5, C6orf130, CABYR, CASP4, CCDC34, CD99L2, CDH1, CEP70, CFHR1, CFHR3, CFI, CIR1, CLMN, CYHR1, CYP4F11, CYP4F12, CYP4F3, DAB2, DEPDC4, DHCR24, DNAJB4, DPYD, EFHC1, ELF3, ELP4, EPB41L4A, FAM111A, FAM55C, FGG, FKBP5, GATM, GCA, GIP, GRIP1, HAO1, HBP1, HERC6, HFE, HIST1H2AG, HMGB2, HSD17B11, ID1, IFI35, IFIT1, IFT81, KCNT2, KIAA1161, KIAA1370, KIF20A, KLHDC2, KLHL24, LHX8, LIMD1, LNX, MARCKS, MATN2, MCCC1, MEIS2, MLEC, MRAP2, MUT, NAP1L2, NBEA, NCAPD2, NDRG1, NEB, NEDD4L, NOTCH2, NOTCH2NL, NPY1R, NRG4, P2RX4, PAN2, PARP14, PARP9, PBLD, PCMTD1, PDGFC, PECR, PER2, PTGR2, RAP1GAP, RARB, RFX5, RHOBTB1, RND1, RNF213, SCNN1A, SEMA3E, SERPINB1, SESN3, SFRS18, SH3BGRL2, SLC23A2, SLC29A3, SLC35D2, SLC40A1, SLC41A2, SOAT1, SPATA7, SPP1, SPTLC3, STAT6, STRA6, SYCP2L, TBC1D5, TGFB2, TM4SF20, TMEM140, TMEM37, TMEM50B, TPCN1, TRIM31, TSKU, TTC28, TTL6, USP3, VCAN, VPS13C, ZFYVE1, ZKSCAN1, ZNF277, ZNF287, ZNF292, ZNF608, ZNF704</i>	Decreased	0.023
Pax-4	M00377	<i>ACAD11, ADH6, ARMCX3, BCAS3, BTN3A1, C20orf19, C5</i>	Decreased	0.023

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		<i>CACNA1D, CCDC34, CCPG1, CEACAM1, DCDC2, DEPDC6, DET1, DMXL2, ENTPD5, ERBB3, FAM105A, FNIP1, HIST1H2AG, HIST2H2BA, KIAA1712, LHX8, MIA2, NBEAL1, NR0B1, PFKFB3, PLCH1, POF1B, SASH1, SFRP4, SLC2A12, SPP1, STEAP2, TBC1D5, TFDP2, UGT2B15, WEE1, YPEL2, ZNF292, ZNF704</i>		
GATA-1	M00128	<i>ACSS2, ADH1C, ADH6, APOBEC3C, AR, BCL2L15, BDKRB2, C5, CASP4, CCDC80, CCNG1, CDCA7L, CYFIP2, CYP4F11, CYP4F12, CYP4F3, DPYD, EFHC1, ELP4, FRK, GIP, HNF4G, KIAA1109, KIF20A, LYRM5, MYO1A, NAGA, RHOBTB3, SLC40A1, STAT6, TBC1D8B, TIGD2, TNFSF10, ZNF292</i>	Decreased	0.023
Ncx	M00484	<i>ABCA1, ACTA2, APAF1, C20orf194, CASP4, CDCA7L, CENPF, CEP152, CNNM2, CYB5A, CYP4F11, DIAPH2, DTX3L, EFHC1, GPRC5B, GSTA4, HBP1, ITPR2, KIAA1712, LIMA1, MANBA, NNT, NPY1R, NRG4, OSBPL9, PGAP2, PIGN, RHOBTB3, RNF213, SFRS18, SLC25A27, STEAP2, SVEP1, TMEM60, USP3, WWP1, YPEL2, ZBTB20, ZKSCAN1, ZNF704</i>	Decreased	0.023
FOXP1	M00987	<i>ABCA1, ABCA12, ADH1C, ADH6, ALPK1, ANKRA2, ANXA13, APH1B, AR, ARFGAP2, ARID5B, ARMCX3, ASPM, BBS9, BDH2, BNIP3L, BTN3A3, C1S, C4orf18, C5orf42, CACNA1D, CCDC28A, CCPG1, CEP152, CFH, CFI, CRBN, CTNND1, DAB2, DEPDC6, DYNC2H1, EFNA1, ELP4, EML4, ENTPD5, ERAP1, ERBB3, FAM111A, FAM149B1, FGG, FNBP1L, FNIP1, GABARAPL1, GRIP1, HAO1, HIST1H2AC, HIST2H4A, HOOK3, HSD17B11, HSD17B6, IFIT1, IFT81, INADL, ING4, ITPR2, KCNK5, KIAA1370, KIAA1632, LIMD1, LITAF, LYRM5, MANSC1, MARCKS, MCCC1, MIA2, MR1, NAP1L2, NBEA, NBEAL1, NCALD, NPY1R, NR5A2, NRG4, OSBPL9, PBLD, PCMTD1, PDCD4, PECR, PLCH1, POF1B, PTGR2, PTPLAD2, SASH1, SKAP2, SLC16A7, SLC25A27, SLC35D2, SLC41A2, SOAT1, SPATA18, SPP1, SPTLC3, STEAP2, SYCP2L, SYNE2, TBC1D5, TBC1D8B, TGFB2, THG1L, TIGD2, TLR1, TLR3, TM4SF20, TMC7, TMEM144, TMEM37, TMEM50B, TXNIP, UGT2B15, WEE1, WWP1, YPEL2, ZNF224, ZNF287, ZNF292, ZNF608, ZNF654</i>	Decreased	0.023
ELF-1	M00746	<i>ABCA12, ADH1C, AHCYL1, ARHGAP1, ARID4B, ARRB1, BCL2L15, BNIP3L, C1RL, C20orf74, C5orf42, CABYR, CCBL2, CCNG1, CFH, CFHR1, CTNND1, DAB2, DHCR24, DMXL2, DZIP3, EHHADH, ELMO1, ELOVL6, FGA, FRK, IQGAP2, LARGE, MARCKS, MCCC1, MR1, MUT, NAP1L2, NEK11, NR0B1, NUDT7, OPHN1, PAN2, PDK2, PGAP2, PLCD4, PLCH1, RHOBTB1, SAMD9, SESN3, SFRP4, SLC35D2, SOAT1, STAT6, TBC1D5, TGFB2, TLR1, TM4SF20, TTL6, ZBTB20, ZNF608</i>	Decreased	0.026
HNF-6	M00639	<i>ABCA12, ABCG2, ADHFE1, ALDH5A1, ANO5, APOH, ARID4B, ARID5B, BLMH, BTN3A3, CACNA1D, CCBL2, CFH, DAB2, DEPDC6, DET1, DYNC2H1, EFHC1, ENTPD5, FGB, FGG, GCA, HABP2, HBP1, HIST1H2AC, HNF4A,</i>	Decreased	0.027

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		<i>HNF4G, KCNK5, KIAA0922, KIAA1377, KIAA1712, MARCKS, MCCC1, MTMR11, NAP1L2, NCALD, NEB, NNT, NRG4, PDZK1, PLCH1, POF1B, RFX5, SLC16A7, SLC25A27, SLC41A2, SSBP2, STX17, UGT2B15, ZNF292</i>		
Alx-4	M00619	<i>ADH1C, BTBD11, CEP152, FGFR4, FNBP1L, HIST2H2AA3, HMGB2, HOOK3, MARCKS, NR1D2, PDCD4, PIGN, PLEKHH2, ZNF654</i>	Decreased	0.029
RP58	M00532	<i>AQP3, CCL2, CSRP1, DHX37, DPT, GREM2, IL8, ITGA3, ITGA6, ITGBL1, KRT38, SMOX, SNRPN, XDH</i>	Increased	0.034
Lyf-1	M00141	<i>ABCB6, APOH, ARSE, ATG2B, BLMH, CCBL2, CDCA7L, ERBB2, FAM111A, FAM38B, FGG, FRAS1, GRIP1, HNF4A, KIAA0922, LYRM5, MYO1A, NBEA, NRG4, PBLD, PGAP2, PLD1, PTGR2, SLC25A27, SLC40A1, SULT2B1, SYNE2, TC2N, TJP2, TSPAN15, ZKSCAN1, ZMYM3, ZNF608</i>	Decreased	0.036
En-1	M00396	<i>ABCA1, ACSM3, ALPK1, C1S, C20orf194, CASP4, CDCA7L, CEP152, CRBN, DIAPH2, DTX3L, EHHADH, ELOVL6, FAM105A, FAM38B, FM05, GCA, HABP2, HIST2H4A, INADL, MANBA, MUT, NPY1R, PAIP2B, PARP14, SH3BGRL2, SLC25A27, SPTLC3, SVEP1, SYCP2L, TMEM60, UGT2B15, YPEL2, ZKSCAN1</i>	Decreased	0.038
ER	M00191	<i>AQP3, CLDN1, FBXO40, GABRA5, GFPT2, GLS, GPRC5A, LAMC2, LRRFIP1, P2RY4, PAQR5, PHLDA1, SEMA3C, SLC04A1, WDR69, XDH</i>	Increased	0.039
AFP1	M00616	<i>ALDH5A1, ASPM, BTN3A1, C10orf57, C6orf130, CACNA1D, CALCOCO1, CCNG1, CORO2A, CTNNND1, EHHADH, FGB, FOXN3, FRAS1, ID1, KCNT2, KIAA1712, KIF13B, LIMA1, LYRM5, MARCKS, MLEC, NAP1L2, NIPAL3, NIPSNAP3A, NUDT7, PBLD, PFKFB3, PLCH1, POF1B, RARB, RFX5, SFRP4, SFRS18, SLC16A7, SLC41A2, TIGD2, TLR1, TMEM144, TXNIP, UGT2B15, ZC3H6, ZMYM3, ZNF292, ZNF654</i>	Decreased	0.041
Evi-1	M00082	<i>ABCG2, ADH1C, ADH6, ALS2CR8, ANG, ANXA13, APOH, ASPM, BDKRB2, BNIP3L, C1orf63, C5orf42, CCNG2, CEP152, DYNC2H1, FAM55C, HIST2H2AA3, HIST2H2BA, KIAA1632, LYRM5, MANSC1, MBOAT1, MCCC1, MR1, MSI2, MYO1A, NCALD, NEB, NRG4, PIGN, PLCH1, RFX5, SAMD9, SLC41A2, SLC7A2, STAT6, TM4SF20, TMEM144, TXNDC16, TXNIP, WWP1, ZNF292, ZNF608</i>	Decreased	0.042
Gfi-1	M00250	<i>ACSS2, AS3MT, BCL2L11, BDH2, BLMH, CABYR, CDK5RAP3, CEP152, CTNNND1, CTTNBP2, DIAPH2, ERBB3, FARP2, FGB, FGFR4, GCA, GRIP1, HBP1, HIST2H4A, HNF4A, INADL, KDM3A, KIAA1377, LIMD1, LRP1, LYN, NNT, NRG4, PAIP2B, PECR, PLCD4, POF1B, RHOBTB3, SASH1, SCAPER, SH3BGRL2, SKAP2, SLC2A12, STEAP2, TMC7, VPS39, YPEL5, ZBTB20, ZNF292</i>	Decreased	0.042
LEF1	M00805	<i>AKAP12, AKR1B1, ANKRD1, ANXA10, AQP3, C10orf114, CD55, CLDN1, CPA4, CPZ, CST1, CTPS, DND1, DUSP5, EMP1, EPHA2, EREG, FGFBP1, FRMD3, FSHB, FSTL5, GABRA5, GDF15, GFPT2, GLIPR1, GPRC5A, HAS2,</i>	Increased	0.043

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		<i>HBEGF, HTR3D, IL8, ITGA3, ITGBL1, KIAA1199, KRT38, KRT80, LAMC2, NAV3, NOSTRIN, NRG1, ODC1, PMEPA1, POU1F1, PSG8, RAB3B, S100A3, SAMD7, SEMA3C, SERPINB8, SLC04A1, SOCS2, SPRR2B, STC1, THBD, TNS4, UBASH3B, XCL1, XDH</i>		
OTX	M01117	<i>ANKRA2, C14orf106, CASP6, CRBN, CTNND1, CTTNBP2, DIAPH2, ELF3, FAM149B1, FGB, HIST1H2AG, HIST2H4A, IP6K2, KDM3A, KLHDC2, MARCKS, NFKBIZ, NIPSNAP3A, NUDT7, PCDH9, PCMTD1, PECR, PLCD4, SESN3, TBCK, TSPAN15, WEE1, ZNF292</i>	Decreased	0.047
CDP	M00102	<i>ABCA1, ACAD11, ALPK1, ALS2CR8, APOH, ARFGAP2, ARID5B, ARMCX3, BAMBI, BCMO1, BNIP3L, BTN3A3, C4orf34, CCBL2, DAB2, DEPDC6, DET1, DYNC2H1, DZIP3, EFHC1, FGB, FGG, HIST1H2AG, HIST2H4A, HNF4A, HNF4G, HOXA2, INADL, KIAA1109, MARCKS, MCCC1, MTMR11, NIPSNAP3A, NRG4, NUSAP1, PDGFC, PDZK1, PIGN, SASH1, SEMA3E, SERPINA6, SFRS18, SLC16A7, SLC41A2, STEAP2, STX17, TBC1D5, TBCK, TLR3, TM4SF20, TMEM136, TXNDC16, UGT2B15, ZNF654</i>	Decreased	0.047
c-Ets-1	M00339	<i>ANXA3, CALB1, CD55, CSRP1, CXCL5, DUSP1, LAMC2, LM07, NCEH1, NMNAT2, NOSTRIN, NR4A1, NRG1, PHLDA1, PLEK2, PSG8, S100A3, SOCS2, SSFA2, TGFA, THBD, TMEM171, TNS4</i>	Increased	0.049

Supplemental Material, Table 6: Genes commonly differentially expressed upon exposure to photochemically altered (PCA) pollutants or cigarette smoke (CS).

Genes identified as differentially expressed due to PCA exposure that are also differentially expressed in human lung cells exposed to cigarette smoke (Maunders et al. 2007) are listed, along with their direction of gene expression fold change (FC).

Gene Symbol	PCA Pollutant-Induced FC Direction, 9 hr Post-Exposure	CS-Induced FC Direction, 1 hr Post-Exposure	CS-Induced FC Direction, 6 hr Post-Exposure	CS-Induced FC Direction, 24 hr Post-Exposure
<i>ALDH5A1</i>	decrease	decrease	decrease	decrease
<i>ALDH6A1</i>	decrease	decrease	decrease	decrease
<i>ATP8B1</i>	decrease	decrease	decrease	decrease
<i>BMPR2</i>	decrease	decrease	decrease	decrease
<i>C1RL</i>	decrease	decrease	decrease	decrease
<i>CDH1</i>	decrease	decrease	decrease	decrease
<i>DTX3L</i>	decrease	decrease	decrease	decrease
<i>EIF2C4</i>	decrease	decrease	decrease	decrease
<i>EML4</i>	decrease	decrease	decrease	decrease
<i>ERBB3</i>	decrease	decrease	decrease	decrease
<i>FCHSD2</i>	decrease	decrease	decrease	decrease
<i>HOOK1</i>	decrease	decrease	decrease	decrease
<i>KIAA1161</i>	decrease	decrease	decrease	decrease
<i>KIAA1377</i>	decrease	decrease	decrease	decrease
<i>LBA1</i>	decrease	decrease	decrease	decrease
<i>MARCKS</i>	decrease	decrease	decrease	decrease
<i>NCOA2</i>	decrease	decrease	decrease	decrease
<i>NFIA</i>	decrease	decrease	decrease	decrease
<i>NOTCH2</i>	decrease	decrease	decrease	decrease
<i>PARP14</i>	decrease	decrease	decrease	decrease
<i>PDPR</i>	decrease	decrease	decrease	decrease
<i>RBPMS</i>	decrease	decrease	decrease	decrease
<i>ROBO1</i>	decrease	decrease	decrease	decrease
<i>SASH1</i>	decrease	decrease	decrease	decrease
<i>SESN3</i>	decrease	decrease	decrease	decrease
<i>SLC7A2</i>	decrease	decrease	decrease	decrease
<i>STX17</i>	decrease	decrease	decrease	decrease
<i>SYNE2</i>	decrease	decrease	decrease	decrease
<i>TGFB2</i>	decrease	decrease	decrease	decrease
<i>TP53INP1</i>	decrease	decrease	decrease	decrease
<i>VPS13C</i>	decrease	decrease	decrease	decrease
<i>ZKSCAN1</i>	decrease	decrease	decrease	decrease
<i>MSI2</i>	decrease	decrease	decrease	increase
<i>NOTCH2NL</i>	decrease	decrease	decrease	increase
<i>FBXO32</i>	decrease	decrease	increase	decrease
<i>TFDP2</i>	decrease	decrease	increase	decrease

Gene Symbol	PCA Pollutant-Induced FC Direction, 9 hr Post-Exposure	CS-Induced FC Direction, 1 hr Post-Exposure	CS-Induced FC Direction, 6 hr Post-Exposure	CS-Induced FC Direction, 24 hr Post-Exposure
<i>WSB1</i>	decrease	decrease	increase	decrease
<i>INADL</i>	decrease	decrease	increase	increase
<i>PCDH9</i>	decrease	decrease	increase	increase
<i>CLDN1</i>	increase	decrease	decrease	decrease
<i>GLIPR1</i>	increase	decrease	decrease	increase
<i>LRRFIP1</i>	increase	decrease	decrease	increase
<i>SSFA2</i>	increase	decrease	decrease	increase
<i>AREG</i>	increase	decrease	increase	increase
<i>DUSP4</i>	increase	decrease	increase	increase
<i>DUSP5</i>	increase	decrease	increase	increase
<i>EREG</i>	increase	decrease	increase	increase
<i>GDF15</i>	increase	decrease	increase	increase
<i>HBEGF</i>	increase	decrease	increase	increase
<i>JUN</i>	increase	decrease	increase	increase
<i>NR4A1</i>	increase	decrease	increase	increase
<i>PHLDA1</i>	increase	decrease	increase	increase

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